SECOND SERIES VOL. IX, No. 5

BULLETIN

OF

THE NEW YORK ACADEMY OF MEDICINE

INCORPORATED 1851

MAY, 1933

PUBLISHED MONTHLY BY

THE NEW YORK ACADEMY OF MEDICINE

2 East 103 Street

New York, N. Y.

Announcement

To the Fellows of the New York Academy of Medicine

•

THE
WICKERSHAM HOSPITAL
133 EAST 58th STREET
NEW YORK

Telephone: Wickersham 2-7441

offers

the facilities of a thoroughly modern equipped hospital designed to meet every requirement at surprisingly

Low Rates

•

INQUIRIES INVITED

SECOND SERIES VOL. IX, No. 5

BULLETIN

OF

THE NEW YORK ACADEMY OF MEDICINE

INCORPORATED 1851

MAY, 1933

PUBLISHED MONTHLY BY

THE NEW YORK ACADEMY OF MEDICINE

2 East 103 Street

New York, N. Y.

Entered as second-class matter, February 3, 1928,
at the Post Office at New York, N. Y., under the Act of August 24, 1912.
Subscription $2.00 per year. Single copies, 25 cents.

OFFICERS AND STAFF OF THE ACADEMY

1933

President
* BERNARD SACHS

Vice-Presidents
FREDERICK TILNEY
HARLOW BROOKS
FRED P. SOLLEY

Recording Secretary
FOSTER KENNEDY

Treasurer
SETH M. MILLIKEN

Assistant Secretary
FREDERICK P. REYNOLDS

Assistant Treasurer
RODERICK V. GRACE

Trustees

SAMUEL W. LAMBERT
JAMES ALEX. MILLER
JAMES F. MCKERNON
*GEORGE DAVID STEWART
EUGENE H. POOL
JOHN A. HARTWELL
CHARLES L. DANA
SAMUEL A. BROWN
ARTHUR B. DUEL
FREDERIC E. SONDERN

Council
The President
The Vice-Presidents
The Trustees
The Treasurer
The Recording Secretary
The Chairmen of
Standing Committees

Director
LINSLY R. WILLIAMS

Librarian
ARCHIBALD MALLOCH

Medical Secretary
Committee on Medical Education
FREDERICK P. REYNOLDS

Executive Secretary
Public Health Relations Committee
E. H. L. CORWIN

Executive Secretary
Press Relations Committee
IAGO GALDSTON

Editorial Writer
FIELDING H. GARRISON

Library Consultants

LAURA E. SMITH
ARNOLD C. KLEBS
B. W. WEINBERGER
LEONARD L. MACKALL

Legal Counsel
FRANK L. POLK, ESQ.

* Deceased

CONTENTS

Editorial:

The Medical Literature of France, F. H. Garrison..... 267

Symposium: *Recent Studies on the Effects of Tobacco in Man*:

Recent Immunologic Experiments in Tobacco Hypersensitivity, Marion B. Sulzberger..... 294

Tobacco Sensitiveness in Thrombo-Angiitis Obliterans, Migrating Phlebitis and Coronary Artery Disease, Joseph Harkavy 318

Discussion:

Harlow Brooks..... 323

Robert H. Halsey..... 325

Lewis A. Conner..... 327

Fee-Splitting. Report of the Committee on Professional Standards 329

Recent Accessions to the Library..... 331

Proceedings of Academy Meetings..... 338

Honorary Fellows and Fellows Elected 349

Council Resolutions: George David Stewart..... 351

Deaths of Fellows of the Academy..... 353

Corrections 354

Donations to the Library Funds..... 354

Form of Bequests..... 354

COMMITTEES OF THE COUNCIL AND TRUSTEES

1933

HOUSE COMMITTEE

Arthur B. Duel, *Chairman*
Seth M. Milliken
*George David Stewart
Samuel A. Brown

NOMINATING COMMITTEE

Edward L. Keyes, *Chairman*
Fordyce B. St. John
John Wyckoff

COMMITTEE ON PROFESSIONAL STANDARDS

William B. Parsons, Jr. *Chairman*

Harry Aranow
Edwin Beer
Walter L. Niles
Alfred T. Osgood
Bernard Samuels
Alexis V. Moschcowitz
Everett W. Gould
Peter Irving

FINANCE COMMITTEE

Seth M. Milliken, *Chairman*
Samuel W. Lambert
James F. McKernon
James Alex. Miller
Eugene H. Pool

ADVISORY FINANCE COMMITTEE

Mr. George Blagden
Mr. Moreau Delano
Mr. Theodore Hetzler
Mr. James B. Mabon
Mr. Edwin G. Merrill

PRESS RELATIONS BUREAU

John J. Moorhead, *Chairman*

Samuel J. Kopetzky
Alexander T. Martin
Fred P. Solley
William C. White
Orrin Sage Wightman
Iago Galdston,
Executive Secretary

SALMON MEMORIAL COMMITTEE

C. C. Burlingame, *Chairman*

William Logie Russell
George H. Kirby
Adolf Meyer
Frederick Tilney

---

*Deceased

BULLETIN OF
THE NEW YORK
ACADEMY OF MEDICINE

VOL. IX MAY, 1933 No. 5

EDITORIAL

THE MEDICAL LITERATURE OF FRANCE[1]

"To attempt to isolate the history of medicine from medical writings only," said Billings, "is like cutting a narrow strip from a piece of tapestry and speculating upon the origin and purpose of the cut threads of patterns that may be found in it." We must consider the warp as well as the woof, the woods as well as the trees. The comparative study of medical literature has shown conclusively that while the theoretic or pragmatic medicine of any country or period is contained in the basic texts and text books, the most realistic sidelights on its actual, every day status are to be gleaned from poets, dramatists, novelists and other practitioners of creative and imaginative literature. In the case of France, a huge hexagon of territory, largely isolated from the rest of Europe by oceanic and mountain barriers, the serious development of medicine was to be intermitted for centuries by the lengthy struggle for national unity out of a loose congeries of provincial areas, controlled by capricious feudal overlords. The end was well nigh attained under Philippe Auguste (1180-1223), ablest of the Capets, obliterated by the ineptitude of the Valois in the Hundred Years War over English claims to the crown (1337-1453) and not finally compassed until Louis XI effected fusion by subjugating his rebellious vassals (1481). The development of the French language out of decomposed Latin, by assimilation of exotic elements, corresponds roughly with this tedious integrative process, in which the energies of the Normans were deflected into

[1]Read at a meeting of the Romance Journal Club, Johns Hopkins University, Baltimore, on February 28, 1933.

the Crusades and the century of internecine warfare with England. There was the same waste of energy and money in the senseless wars of the Bourbons, with their consequence, the Revolution and the Napoleonic period, after which Republican France emerges as an administrative organization of eighty-three, eventually ninety departments, not unlike the states of the American union. The embryology and building up of nations in the Middle Ages was a painful, intricate process, seriously hampered by the Feudal System, and more easily and speedily accomplished in small countries, like England or Switzerland, than in larger areas, such as Germany or Italy, which did not attain to national unity until the year 1870.

The Latin medical literature of Italy dates back to the 11th century. That of France did not put in an appearance until 200 years later, while medical literature in the vernacular did not become consequential until after the invention of printing. Through the Latinization of the West and the conversion of the barbarians to Christianity, the medicine of the Dark Ages was to be monastic medicine, taught and cultivated by priests, who, along with the cold-storage plant at Byzantium, preserved the relics of the ancient learning. With the rise of the School of Salerno, South European medicine began to be secularized as a phase of university teaching. At the same time, it became Arabized, remaining under the sway of Islam up to the Renaissance, when people began to contact with reality, hence to think for themselves and so to express themselves in the mother tongue. Through the long, dreary middle period, the peoples of Europe were virtually nationless, "the indifferent children of the earth," as Shakespeare has it, and for a full thousand years after the downfall of the Western Empire, the medical literature of Europe was to be written and published mainly in Latin. From the development of the *lingua franca,* or pigeon French, out of Latin, Celtiberic, Moorish and Teutonic elements, came the *chansons de geste,* the *romans d'aventures* the *lais* and the *fabliaux,* to which we shall turn for a life-like picture of every day medicine in mediæval France[2]. As to the actual

medical teaching, the monkish and professional physicians in the same period, we have providentially an admirable geomedical survey of Western France in the Middle Ages by Dubreuil-Chambardel, published by the Société française d'histoire de la médecine in 1914[3].

Far from the four waterways and the military roads of mediæval France, hence relatively unaffected by the Norman invasion, stood the great basilica of Chartres, and here, at the end of the 10th century, Gerbert of Reims, with his pupils, Heribrand and Fulbert, taught and practiced medicine in the cloister schools attached to the cathedral. At the gates of Tours, on the right bank of the Loire, stood the Abbey of Marmoutier, a kind of mediæval university, which numbered among its medical students, the Angevin scholar, Marbodus, author of the celebrated therapeutic treatise on the virtues of stones (*liber de lapidibus*) and of other verses bearing upon medicine in the Abbé Migne's Patrologie. In the 8th century, the cloistral school attached to the basilica of St. Martin at Tours was directed by no less than Alcuin, who established in it a *scriptorium*, the best school of calligraphy in the Carolingean period. Among his pupils were Hrabanus Maurus, who wrote much on medicine and Hugo of Tours, who competes with Odo

---

[2]Oscar Kühn: Ueber Erwähnung und Schilderung von körperlichen Krankheiten und Körpergebrechen in altfranzösischen Dichtungen. 1. Teil. 8° Breslau, 1903. *Continued as*: Medizinisches aus der altfranzösischen Dichtung (Abhandl. z. Gesch. d. Med. VIII) 8° Breslau, 1904. *Also*: Franz Laue: Ueber Krankenbehandlung und Heilung in der Litteratur des alten Frankreichs. Göttingen diss. 8° Arnstadt, 1904. *Also*: Georg Manheimer: Etwas über die Aerzte im alten Frankreich nach mehreren alt-und mittelfranzösischen Dichtungen. Berlin diss. 8° Erlangen, 1890, (Roman. Forsch., Erlangen, 1891, VI, 581 *et seq*).

[3]L. Dubreuil-Chambardel: Les médecins dans l'ouest de la France au XI• et XII• siècles. 8° Paris, 1914. For the clever grouping of provincial physicians, in which the French medical historians excel, see also: J. Roger: Les médecins normands du XII• au XIX• siècle. 8° Paris, 1890-95. Les médecins bretons. 8° Paris, 1900. P. Delaunay: Vieux médecins mayennais. 8° Paris, 1903. E.-A. Begin: Lettres sur l'histoire médicale du nord-est de la France. 8° Metz, 1840. A. Cartaz: Les médecins bressans. 8° Paris, 1902. A. Lesfargues-Lagrange: Nos médecins bordelais. 8° Bordeaux, 1878, etc.

of Meudon as one of the possible authors of the well-known herbal, *De virtutibus herbarum,* assigned to Macer Floridus. So too, in the capitularies and cartularies of all the claustral and charter house schools of Touraine, Poitou, Anjou, Maine and Normandy, we find abundant records of medical teaching and practice by the learned ecclesiastics associated with these foundations, as well as by laic or professional physicians. Strong men these, if we may judge of them by authenticated records and in the light of the stressful times in which they lived. In Western France, the record of monastic medicine would appear to have been better than most.

In this area and period, physician, pharmacist and surgeon were one and the same, although tonsuring, shaving and blood-letting were already delegated to that subalternized industrial who was to give so much trouble later, namely the barber, *barbitonsor* or *phlebotomus*; while medicinal simples were obtained at the shops of the herb-gatherers, who were variously called *herbarii, pigmentarii* or even *épiciers.* Venesection, too, was practiced by the monks themselves, the main indications being a plethoric habit of body and the temptations of the flesh. A doctor was known either as *physicus or medicus,* since *physica,* equated by Alcuin with natural science, was elsewhere or otherwise synonymous with medicine, while *chirurgus, apothecarius* and the vernacular expression *mire* also signified physician. In the *romans, chansons* and *fabliaux,* we find the *mire* to be, in some places, a sort of general assistant in all manner of diseases and injuries, in others occupied exclusively with external wounds, in others, a professional physician, educated at Salerno or Montpellier, whose functions were sometimes assumed by low-caste impostors (*le vilain mire*). Through the whole period of feudalism and chivalry, battle wounds were the main item of medical interest in the epics and romances of adventure and wounded knights were treated variously by comrades, squires, ladies of high degree or any other persons available.

The *chansons de geste* tell much of battle wounds, little of disease. The romances of adventure and those of the Arthurian cycle are replete with instances of sickness at court or in the open, for instance, the many ailments of Tristan or the account of leprosy in *Amis et Amiles.* But it is in the dramatic pieces, the *fabliaux,* the mysteries, miracle plays and moralities, that scholars have found the best sidelights on mediæval medicine.

Thus in *La condamnacion de bancquet,* a morality by Nicole de la Chesnaye, catarrh, gout, debility, asthma, lame joints, fever, dropsy, paralysis,

pleurisy, colic, jaundice, apoplexy, epilepsy, diphtheria and stone in the bladder appear on the stage as protagonists of the evil effects of over-indulgence in eating, drinking and venery, while physicians of credit and renown descant upon these disadvantages of riotous living. In a mystery called *Les miracles de Sainte Genevieve,* the wrath of God and the necessity of conversion and repentance are illustrated by the appearance of a dropsical patient, who is afflicted from head to foot with scabies, hernia, stone, unilateral paralysis, gout, haemorrhoids and halitosis. A varlet in this mystery has gout, a phthisical cough, infestation with parasites, jaundice, measles and smallpox. Both call upon God for relief:—

"Dieu, vostre aide par charité,"
"Sire, j'ay tel deuil que je criève,
De ce que je suis sy gouteus,
Que des deux hanches suis boiteus,
Et ay la tous, maise poitrine,
Clous, pous, cirons, lentes, vermine,
J'ay chascun jour la feinterole,
J'ay le jaunice et suis éthique,
Ne guérir n'en puis par phisique."

In all these dramatic pieces, diseases are listed in profusion, but no particular attempt is made to outline their semeiology. Many, such as St. Anthony's fire or ergotism, *le mal de Saint Jehane* or epilepsy, the mysterious *mal de Saint Fiacre,* presumably haemorrhoids, are associated with their patron saints, who had the power of healing them. In the Middle Ages, when the average expectation of life was less than half the age now accepted by actuaries, the possibility of being disabled or extinguished by disease was omnipresent in the minds of the people. Health during a life certain to be short, *n'estre malade ni mourir,* was an almost universal aspiration:

"Qui n'a rien, il ne perd rien,
Qui n'a santé, il n'a rien,
Qui a santé, il a tout."

Pain, sorrow, warfare, disease and poverty are featured in harsh outlines as the common lot[4], so much so, in fact, that at the beginning of the 16th century, the depiction of

[4]For example, the mediæval motto of *La mare au diable* of George Sand:

"A la sueur de ton visage
Tu gagnerois ta pauvre vie:
Après long travail et usiage,
Voici la mort qui te convie."

ghastly diseases has become a favorite theme of oil painting and the grim skeleton of the Holbein *Danse macabre* is lord of all. Even the profanity of the period took the form of wishing diseases or an evil death upon one's enemies or haply upon oneself for some trait of stupidity. "A pox upon you" or the "Saint Anthon fire thee" of Scott's Marmion may be matched by such expressions as *"Le mal passion le tord"* or *"Male mort le preigne et ocie."* Disease was bitter, treacherous and repulsive. Only the *mal d'amour* was sweet. Female complaints, in particular, were made light of (*Mal de femme, ce n'est rien*) and the feigning of disease by knights and ladies, to further their love affairs, was a common deception, even as beggars sought sympathy by means of artificial wounds or posed as professional cripples. The pathology of the older epics and *fabliaux* was thus a very general pathology, in which diseases were usually of undecipherable or incurable nature and of unknown or supernatural causation, curable only by miracles. The agony of intestinal obstruction or appendicitis was likened to the Passion of Christ, as *passio iliaca,* and a martyrology of the saints or a text-book on the practice of medicine was called alike a *Passionarius.*[5]

The effects of violent emotion upon the heart, the blood-vessels, the lungs, larynx, skin, nervous system and the organs of sense were depicted with a fidelity of detail which would do credit to the books of Darwin or Duchenne upon this subject. A chill was usually associated with fever and the account of the Third Crusade by Ambroise attributes cough, tonsillitis, swelling of the limbs and loosening of the teeth, to the continual rain and damp weather incident to this campaign. Scurvy was, in fact, described by Joinville and Jacques de Vitry as early as 1250. Heat-stroke, heart disease, hernia, discharges from the ears, sea-sickness, vertigo, tertian and quartan fevers, quinsy, scabies and diseases affecting the different organs of the body were all known to the old French poets and dramatists. The symptoms of leprosy, in particular, are given in great detail. As to the social status of the leper, he appears to have been treated with great sympathy and consideration. Tristan even simulates leprosy in order to have speech with Yseult. A hideous superstition to the effect that leprosy

[5]Du Cange: Glossarium mediae et infimae latinitatis, Niort, 1886, VI, 198.

was curable only by bathing the body of the leper in the fresh blood of a murdered child is prominent in *Amis et Amiles* and in the miracle play of the Empress of Rome. Diagnosis of disease included palpation, pulse-taking, examination of the blood and uroscopy, by which the patient's condition was often determined at a distance. Treatment was limited to cupping, venesection, purging, clysters, medicinal simples and the knife. Fevers were treated by fasting or copious draughts of wine or sweating. Massage was practiced in surgical conditions. Women were handled with care and consideration during confinement, but while the duration of pregnancy was known, a variable interval of time between the date of conception and the inception of pregnancy was assumed or presumed, to give the benefit of doubt in suspicious cases. Twins were confused with superfœtation, to the detriment of the mother's fair fame. Beatrix, in the Knight of the Swan, gives birth to septuplets, allocated to seven different fathers. There is abundant satire about quackery, bogus physicians, imaginary invalids and malingering.

In brief, a fairly complete picture of the status of medicine in mediæval France can be pieced out from the older epics, romances, *lais* and *fabliaux*. Even the comic-opera figure of the quack in the old farces (*Je suis un bon mire de Salerne*) seems a foretaste of Molière.

The spirit of delicate consideration for the wounded, as conveyed in the old romances, reveals the most pleasing aspect of chivalry:

The first indication was to get the wounded warrior in a bed, if available, otherwise he was laid upon the ground, given a stimulating wound-drink to relieve faintness, after which his wounds were examined, washed and bandaged, before transportation on shields, litters or horseback to some place of safety. Wine was sometimes poured into the wounds and may have had some crude antiseptic effect. After the introduction of fire-arms, boiling oil was poured into the wound up to the time of Ambroïse Paré, on the supposition that such wounds were poisoned. When there was little bleeding in punctured wounds from spears and arrows, the patient usually died of internal hemorrhage. Cupping and leeching were the only palliatives, apart from the services of a new industrial, the professional wound-sucker, who continued to ply his trade unto the end of the 18th century. The ministrations of women, as precursors of organized nursing personnel, are depicted with great charm. In dismounting from his horse, Aucassin misses his stirrup and sustains a dislocation at the shoulder. Whereupon Nicolete, by experimental manipulations at the injured joint, succeeds in reducing the luxation before making him comfortable. In the chronicles of Froissart, the historian of the Hundred Years War (1336-1453), there are

very commendable gropings toward military administration in the evacuation of the wounded, as evidenced by his constant harping on the necessity of getting them to shelter (*au logis*) and of making them comfortable by suitable dressing (*mettre à point les navrés et les blessés*). Froissart anticipates Rabelais in his jocund, expansive recital of the food supplies. He contrasts the poverty, penury and abstemious habit of the Scotch soldiers with the English concern for creature comforts, their cooking stoves, handmills for grinding grain and lavish commissariat; or the travelling kitchens, bakeries and portable barracks of the French, the salves, bandages and lint in the supply-trains, the old Roman ration of vinegar in lieu of wine. He gives full length descriptions of the camp at Chisay (Poitou) in 1372, the successive epidemics of jaundice (1378), of presumable typhus (1385), of presumable influenza of gastro-intestinal impact, which necessitated the raising of the siege of Lisbon (1384), the impact of heat-stroke in 1391, and the never ending epidemics of dysentery and malarial fever with which the French army was scourged. We are now at the end of the 14th Century.

The Latin medical literature of mediæval France, as listed in the *Histoire littéraire de la France* or in Haeser, need not detain us long.

It comprises the versified herbal *Macer Floridus*, commonly ascribed to Odo of Meudon (+1161), the poems of Gilles de Corbeuil (+1220), body-physician to Philip-Augustus, on materia medica, pulse, urine and semeiology, the *Régime du Corps* of Aldebrandino (13th Century), and in Provençal, a poetic version of the surgical practice of Roger of Parma by Raimon of Avignon (1200), an anonymous tract on dietetics in verse, a tract on the external application of brandy, and prose translations from Galen, Albucasis, Benvenuto Grassi and Roger of Parma. This remarkable proliferation of vernacular medical literature in the South of France is explicable perhaps by the reasons usually assigned for the rise of Provençal poetry and its extinction after the Albigensian massacres (1207-1215), when the troubadours were driven by unemployment into Northern Spain and Italy. The principal text on practice of medicine, the *Lilium medicinae* of Bernard de Gordon, was enormously influential in the 13th-14th centuries, but is of little positive value. Gordon taught medicine at Montpellier from 1285 to 1307, and here, by consequence of the Moslem invasions and the proximity of Moorish Spain, Arabic influences were predominant. Arabic medicine was Greek medicine diluted by filtration through the Arabic medium, but unfortunately for Arabized Greek medicine, it was saturated with Galenic dogma and imposed this dogma upon the medicine of Western Europe for centuries.

Thus the very initial directives in training the student for the practice of his profession were wrong and wrong-headed at the start, even down to the time of Sydenham. Dominated by what Osler calls "the heavy hand of the Arabian," the internal medicine of the later Middle Ages

is negligible. There is no exaggeration in the dictum of Allbutt that it had sunk into "an almost unexampled degradation" and no danger that we shall ever underestimate its value. The profusion of Latin and Provençal translations of surgical texts is an index of something more exhilarating. "War," said Hippocrates, "is the best school for the surgeon," whence surgery became a going concern for the sufficient reason that necessity was ever the mother of invention. The great surgeons of the Middle Ages were men of striking originality, forced to think for themselves and to devise their own procedures under stress of emergency. Associated with France, in this group, are Lanfranc, Mondeville and Guy de Chauliac.

Lanfranc, the founder of French surgery, came to Lyons from Milan as a pupil of Saliceto. Proceeding to Paris, he found himself excluded from the celibate roster of the university as a married man and so joined up with the College of Saint Côme, founded about 1260-71 by Jean Pitard, surgeon to Philip the Fair. The *Chirurgia magna* of Lanfranc completed in 1293 and dedicated to Philip the Fair, opposed the Arabian separation of medicine and surgery and insisted that the surgeon should know internal diseases. As with all the major surgical texts of the period, this *opus magnum* was translated into French, German, English and even Spanish. The most original of the trio was Henri de Mondeville, who lectured on anatomy at Montpellier in 1304 and during 1306-16, wrote a great unfinished surgical treatise, which has been edited, translated and analyzed in detail by many recent scholars on account of its unquestioned originality. It is prefaced by a remarkable chapter on anatomy, with thirteen miniature illustrations, which afford a sort of moving picture of mediæval procedure in dissecting. Mondeville stands out as the solitary protagonist of rational wound treatment before the time of Lister. He was a bold, hardy, aggressive spirit, who insisted on doing his own thinking, whose Norman truculence crops out everywhere in his cynical comments on the etiquette and practice of surgery in his day.

A man of gentler and more scholarly type was Guy de Chauliac, an Auvergnat, who was the best educated and most learned surgeon of his time, incidentally physician to four successive popes in residence at Avignon. When the Black Death descended upon Avignon in 1348 and 1360, Guy stood manfully by his patients, where others fled. His text-book, completed in 1363, was the accepted guide (*guidon*) to surgical practice, even in Elizabethan England. Its initial chapter is the only history of medicine of consequence between Celsus and Champier.

Glancing for a moment at Montpellier, where some leading representatives of English medicine in the Anglo-

Norman period were trained, we come to the medical humanists of the Renaissance, in particular, Rabelais and Symphorien Champier.

Rabelais was the first to lecture on medicine at Montpellier with the actual Greek text before him. While in residence there, in 1531, he was one of the actors in a medical farce or morality *La comédie de celui qui avait une épouse muette*, derived from *Maître Pathelin* and reproduced both by Molière (*Le médecin malgré lui*) and Anatole France. The next year, Rabelais made his début in literature with his Latin version of the aphorisms of Hippocrates and the *Ars parva* of Galen, as well as the immortal *Pantagruel* (1532). More effectively than any other literary classic does this book express the extravagant joy of life, the expansive self assertion, and swagger, the footless erudition of the awakened Renaissance. Less appreciated than the *gauloiserie* is the point, established by Sainte Beuve, that *Pantagruel* is also the first brief for education as a drawing out of all the natural faculties, in opposition to the mediæval plan of stuffing the brain, like a Strassburg goose, with erudition of the kind ridiculed by the great humanist.

Symphorien Champier, of Lyons, physician to two of the Valois monarchs and a medical graduate of Pavia, was a humanist of the sober-sided erudite persuasion, a conciliator, in the terminology of the time. His Platonic Symphony (1516), attempts to conciliate the doctrine of Hippocrates, Galen, Celsus and Avicenna into a symphonic relation, visualized in the initial woodcut representing these worthies as players in a string quartet. Champier is better known as the author of the first history of medicine after Celsus (1506), the first medical dictionary after Simone Cordo (1508) and as the biographer of Arnold of Villanova (1520) and Mesue (1523). He himself is the subject of an elaborate biography by Allut of Lyons (1859).

The first printed book to be published in France, the *Epistolae* of Barzizius, appeared at Paris in 1470, after which date incunabula were printed in large numbers down to the end of the 15th Century, and in thirty-six towns all over France, apart from the capital. The Parisian and Lyonnaise printers of incunabula make a long list and their output of medical books gave a special incentive to the scholastic labors of the French medical humanists who came after.

The leading internist of 16th century France was Jacques Fernel, a native of Clermont (Auvergne). One of the greatest surgeons of all time was Ambroise Paré.

Fernelius began as a mathematician and indeed made the first exact measurement of a meridian of longitude. But having squandered his means on astronomy, he got down to medical practice and acquired a large fortune. The status of physician to the king was forced upon him by Henri II and he sometimes feigned illness to evade its responsibilities. Nevertheless he cured Catherine de Medici of her sterility, relieved the various complaints

of Diane de Poitiers and was most generous and kindly to the poor. His text book on medicine (1554) reveals the orderly, precise, analytic quality of the mathematical mind, contains the best classification of diseases between Galen and Felix Platter, and is remarkable for the section called *Pathologia,* the first text in which clinical findings are correlated with causation and checked by postmortems. Fernelius differentiated gonorrhœa from syphilis, made many autopsies on tuberculosis and correlated the respiratory, gastro-intestinal, paralytic, lethargic and sensory manifestations of epidemic influenza in an entirely modern spirit. His work is little known except to professional pathologists.

The first great name of European eminence in French medicine is that of Ambroïse Paré. Coming up to Paris from the province of Maine, in 1529, Paré became a dresser at the Hôtel Dieu and entered the army in 1537. His life of eighty years covered the reigns of seven Valois monarchs and three Holy Roman Emperors, everything, in fact, from Flodden Field to the Armada, from Luther at Worms to the battle of Ivry. His whole career was military, and so well beloved was he among his comrades that he was even consulted by monarchs and commanding officers in regard to military operations. Before the advent of Paré, the army surgeon was merely a vassal of monarchs or great feudal over-lords and paid no attention to the common soldier. At Turin, in 1536, Paré saw an old sergeant cut the throats of three helpless wounded men, "gently and without malice," to put them out of their misery. The episode appears to have affected him profoundly and for the first time in military history, we see an army surgeon going out of his way to treat the wounded soldier, as he did at Perpignan (1543) or Boulogne (1545) or on the march through Germany (1552). Not only did he attend these patients, he worried about them, a good sign, as showing that he was beginning to think medically as well as surgically. How he worried about the boiling oil and red-hot irons applied to battle wounds until he learned to let well-enough alone, is an index of his large humanity and insight, the high point in his career. His restatement of the Hippocratic doctrine of the healing power of Nature *"Je le pansay, Dieu le guarit"* means simply that, for a long time, Nature got the patient well, if ever, while the doctor amused him, or himself, with futile remedies. Paré wrote many books, and as he wrote in the vernacular, employed a pedant or *pion* to stuff his collective works with superfluous erudition, after the fashion of his time. This book is nevertheless, the first important folio volume on medicine to be understanded of the people. A bigot of the Paris Faculty tried to stop its publication, whereupon Paré proceeded to flap him with bladders, counselling *mon petit maistre* to treat more kindly *le bon vieillard.* In other words the great achievement of Paré is as nothing beside his reputation in camp and at court, as the honest impersonal soldier and man of honor. In an age in which thousands were slaughtered and heretics were tortured in flaming fire for mere quibbles about theological verbiage, he remained firm, impersonal, upstanding and essentially sweet-tempered to the end.

The Provençal surgeon, Pierre Franco was a Huguenot, driven by the Waldensian massacres into Switzerland. He was a bolder and better operator than Paré and did most to take the operations for cataract, stone and hernia out of the hands of the strolling incisors and put them upon a reliable working basis (1556-61). In 1895, Nicaise published a definitive edition of Franco, whose surgical writings had already been reprinted as late as 1881 and 1884. In this surgical group may be included the first French treatise on diseases of the eye, that of Jacques Guillemeau (1585), of which the English work, of Richard Bannister (1622), was mainly a translation, and *L'hysterotomotokie* (1580) of Francois Rousset, which records 15 successful cases of Caesarean section. Apart from the initial chapter of Paré's Surgery, the outstanding French anatomy in this period was the illustrated quarto got up by Charles Estienne, called Stephanus (1545), a medical publisher who was imprisoned for heresy and died in prison. His book contains the first account of syringomyelia. Whooping cough and rheumatism were put on the map by Guillaume de Baillou, one of the founders of epidemiology. Many new terms were added to the French language from the biological writings of the day, in particular, the books on the comparative anatomy of birds and fishes by the physicians Pierre Belon and Guillaume Rondelet. The botanical treatise of Jean de la Ruelle (1536) gives the French popular names of each plant, which Ruellius acquired by questioning the peasants and mountaineers on his excursions. The first medical dictionaries after Symphorien Champier (1508), were those of Henri Estienne and Jean de Gorris, both published in the year 1564. They were important as fixing definitions for many anatomical terms and have thus had a decisive influence on modern anatomy.

Medicine was naturally reflected in the secular literature of the Renaissance, notably in Ronsard's poetic description of insomnia and Montaigne's account of medical matters, including his own ailments, in his Journey into Italy.

Montaigne's Essays deal with such matters as divination, cannibalism, sleep, that our emotions run away with us, smells, drunkenness, against malingering, of a monstrous child, the resemblance of children to their parents, cripples and physiognomy. On the whole, the most readable medical document of the period is the *Apologia et voyages* of Paré.

In the 17th century, in consequence of Harvey's demonstration of the circulation of the blood, anatomists made many discoveries of physiological significance and laboratory experimentation became a word of ambition. Laboratory medicine went up. Internal medicine and surgery went down. Diagnosis was based upon futile figments of the mind and the tyranny of words, the bizarre terminology ridiculed by Molière. Therapeutics sank to a level of in-

efficiency not much better than that of primitive savages. The London Pharmacopœia was loaded with lengthy rumble bumble and the exploitation of filth as remedies. The worthwhile surgeons of the 17th century can be counted on the five fingers of one hand. The only French internist of consequence was Charles Barbeirac of Montpellier, who is said to have imparted his clinical method to Sydenham. The Parisian internists were the sterile pedants ridiculed by Guy Patin and Molière.

Apart from experimental science, with which even the great philosophers of the period, Bacon, Descartes, Spinoza, Locke, were concerned, the 17th century was remarkable for the origination and growth of scientific societies all over Europe, with their transactions as a means of spreading knowledge more rapidly. It was also the age of newspapers and of medical periodicals.

The first French newspaper, the *Gazette de France*, which appeared in Paris on May 30, 1631, was edited by a physician, Théophraste Renaudot who was also the originator of pawn-shops and intelligence offices. The first scientific periodical was the *Journal des Scavans*, begun in Paris on January 5, 1665, in which year the Academie des sciences was founded. The first medical periodical to be printed in the vernacular was the *Nouvelles découvertes sur toutes les parties de la médecine*, edited by the surgeon, Nicolas de Blegny at Paris in 1679-81, subsequently translated into German, even into Latin, and continued in Latin as the *Zodiacus medico-gallicus* by Théophile Bonet at Geneva in 1680-85. It was succeeded by the *Journal de médecine* (1681-85), edited by the Abbé de la Roque and continued by Claude Brunet, who also edited a monthly *Progrès de la médecine* (1695-1709). The French original of the *Nouvelles découvertes* was suppressed in 1682 on account of its flippant handling of contemporary physicians, which impelled de Blegny to issue a volume of satirical sketches, the *Mercure savant* (Amsterdam, 1684). It is said that this manœuvre, combined with the list of addresses of Parisian physicians at Renaudot's intelligence office, engendered the first city directory, the *Almanac des addresses de Paris*.

The century of Richelieu, Mazarin and Louis XIV was one in which public spirit was utterly crushed out by the tyranny of absolutism and the heavy taxation incident to long, expensive and meaningless wars. When the *Grand Monarque* abolished the ancient office of Mayor of the palace, the joyous, expansive life of the Renaissance had given place to a ponderous stilted formality of costume,

behavior and etiquette, taken over from Spain, and this was not without its effect upon the medical profession. For half a century before the advent of Molière, physicians and surgeons alike were ridiculed as sterile, pedantic coxcombs, who affected the austere scarlet of the clergy or the red heels of the aristocracy and made a vain parade of their Latin, to discourse learnedly about diseases of which they knew little or nothing. The three-cornered squabbles of physicians, surgeons and barbers, the decline of the universities, the rise of scientific academies and periodicals, all these things had to do with the eventual rise of French surgery in the 18th century. The leading names of French medicine in the 17th century were the anatomists Dionis, Vieussens and Duverney, the medical botanist Tournefort, the obstetricians Mauriceau, Portal and Louise Bourgeois, first of the literary midwives, who attended Marie de Medici through her six confinements, and the surgeon Dionis.

Duverney wrote the first text book of otology. Mauriceau developed the accepted canon of obstetrics. Du Laurens maintained the communicability of scrofula (1609). The veterinarian Solleysel demonstrated the transmission of glanders from horse to horse (1664). Lead poisoning was described by Citois as Poitou colic (1616). Vieussens, Portal and Barbeirac were associated with Montpellier. Daniel Leclerc, author of the first large book on history of medicine (1696), was a native of Geneva. Literary interest attaches to the history of King's Evil by André du Laurens (1609), the whimsical gynæcology of Augustin Corrade (1634) called *L'hydre féminine* and the *Callipaedia* of the Abbé Claude Quillet (1656), a poem on the art of begetting beautiful children, which seems, at this time of day, a burlesque approach to eugenics. The satirical onslaughts upon the medical profession by Molière, Le Sage and Guy Patin are too well known to need particular comment. Molière as we have seen, had a long foreground[6]. The intermezzo-ballet in the *Malade imaginaire* of Molière, a burlesque of the ritual of graduation from the Paris Medical Faculty, is the choicest bit of medico-historical satire ever penned by a man of genius.

Lexicography was forward in this century. The great epidemiologist Baillou made a glossary of Hippocratic terms (1639), Gabriel Naudé of the Apologie made another essay in this kind (1647) and etymological lexicons were published by Thevenin (1669), and Callard de la Ducquerie (1673).

---

[6]The graduating dissertation of George T. Moody (Johns Hopkins University, 1932) demonstrates that Molière was the culmination of a steady run of literary satire on physicians during the first half of the 17th Century.

Overtopping all these stand the great names of Descartes and Pascal. The analytical geometry of Descartes (1837) gave to medical and biological investigation a new weapon of precision, the plotting of curves by the coordination of points in space. Pascal rendered equal service through the creation of descriptive geometry and the mathematical theory of probabilities. The starting point of modern experimental or physiological psychology is the treatise *Des passions de l'âme* of Descartes (1649), which antedated the Ethics of Spinoza. Descartes wrote the first formal treatise on physiology (*De homine,* 1662), the intention of which is quite modern in that, as Stensen observed, it does not pretend to expound the actual human body but "a machine capable of performing all its functions." It contains the first correct account of reflex action. Descartes also showed that accomodation in vision is due to changes in the form of the lens (1637). Mariotte discovered the blind spot in the retina (1668). Finally, the *Discours de le methode* of Descartes (1637) expounds, with utmost brevity and simplicity, the four successive steps in the conduct of a scientific investigation, to which no physician of the 17th century paid the slightest attention in attempting to diagnose internal disease:

1. Admit only what is clearly self-evident; in other words, clear your mind of all preconceived notions, obscure theories and footless hypotheses.
2. Analyze all available data with punctilious exactitude.
3. Proceed from the known to the unknown by coordinating said data into a synthetic whole.
4. Revise your findings by a clean sweep of the whole matter and of any unconsidered details. Here we have French intelligence at its best.

Hypnotism, autosuggestion and psychotherapy were well-known in the 16th century[7] and the effects of the mind upon the body became prominent in the subsequent quest of physiologists for the seat of the soul. Descartes located it in the pineal gland, Van Helmont in the pit of the stomach, and Stahl regarded psychic disturbances as the efficient cause of disease. The association of Pascal with

[7]See, Camille Rouzeaud, Paris dissertation No. 4, 1918, who calls this period *le siècle de l'hypnotisme.*

Port Royal, following the collision over the gulf which was the turning point in his career, suggests the many clergymen of the period who practiced psychotherapy by functioning as directors of the female conscience. The *Historiettes* of Tallement des Réaux (1657) the letters of Mme. de Sevigné (1673-97), and the Mémoires of Saint Simon (1734-46) abound in clinical data, some of this species, and all suggestive of the sterility of internal medicine throughout the century.

In the 18th century, the centre of surgical teaching and practice was Paris, to which even Frederick the Great sent junior medical officers for training. The successive steps in this development were three, viz:

The surgeon Felix, having repaired the fistula in ano of Lewis XIV, was ennobled by the king, who created for his successor Mareschal five surgical chairs in the Collège de Saint Côme (1724). Enraged, the Paris Medical Faculty bombarded the doors of Saint Côme in bitter cold weather, but were driven away by the angered populace, who had lost all respect for their furs and costly red robes. Next came the foundation of the Académie de Chirurgie by Mareschal and La Peyronie of Montpellier and its first meeting on December 18, 1731. Finally, at the instance of La Peyronie, Louis XV, in a decree of 1743, freed the surgeons from the barbers by forbidding the latter to practice, since no one could be master of surgery henceforth without the degree of master of arts.

This was the French surgeon's Declaration of Independence, guaranteed by a firm footing of preliminary training and scientific instruction and comparable only with what John Hunter did for the *locus standi* of the English surgeon as Surgeon General of the British Army. The French surgeon, from Dionis to Desault, was now to be a well educated, self-respecting man, fitted to write upon his subject with precision and concision. Laplace even proposed that medical men be admitted to the Academy of Sciences, "so that they could associate with scientific men" (*afin qu'ils se trouvent avec des savants*). The surgical literature of the period is extensive and its importance may be estimated by referring to a few high spots.

The surgical treatise of Dionis (1707), was translated even into Chinese. In 1710, Dominique Anel of Toulouse repeated the operation for aneurysm by a single ligature long before John Hunter took it up. In 1712, Anel

introduced his operation for lachrymal fistula, which preluded the remarkable work of the Norman, Daviel, who became eye surgeon to Louis XV in 1749. In 1752, Daviel started modern ophthalmic surgery by one hundred successful operations for cataract by extraction of the crystalline lens, to which he even added iridectomy. By 1756, he reported four hundred and thirty-four extractions, with only fifty failures, which standardized the procedure in surgical practice. In 1736, Jean Louis Petit opened the mastoid process for the first time. Orthopedic surgery was founded by Nicolas Andry (1741) and Venel of Geneva (1780). Desault founded the *Journal de chirurgie* (1791-2), improved the treatment of fractures and aneurysms and imparted to his pupil Larrey the principle of treating gunshot wounds by *débridement* (excision) with primary suture (1790), which became so prominent on the Western Front over a hundred years later. David, a Norman of Rouen, described spinal deformity from caries, contemporaneously with Pott (1779). Mestivier operated successfully for an appendicitis caused by a pin in 1759. Moreau introduced excision of the elbow during 1786-94 and Chopart his amputation of the foot in 1792. Apart from these war surgeons of the Revolution, there was a remarkable group of neurologic surgeons, of whom Saucerotte and Méhée de la Touche first described acromegaly in detail (1772-73), Pourfoir du Petit (1710) and Saucerotte (1769) established the doctrine of contralateral innervation and Pourfour du Petit developed what little was known of the sympathetic-autonomic system (1723). Work on contrecoup and head injuries was activated by the Académie de Chirurgie itself (1760).

The 18th century was remarkable for a swarm of descriptions of new diseases, in which regard it was only to be surpassed by the clinical output of the 19th.

The first formal treatises on heart disease, those of Vieussens (1715) and Senac (1749) established the basic data about pericarditis and many of the valvular lesions, and preluded the subsequent achievement of Corvisart, Laennec and Bouillaud. Thierry described pellagra in 1755, Nicolas André infraorbital neuralgia in the same year, Lorry melancholia in 1765, Fodéré goitre in 1792. Here was already considerable improvement upon the sterile ineptitudes of the 17th century, a tendency to deal with facts as facts, which was to come into its own when Paris became the Mecca for instruction in clinical medicine during the Napoleonic period and long after. Anatomical research was of the most varied kind. The text book of the Dane, Winslow (Paris, 1731), established many details concerning the origin and insertion of the muscles and their nomenclature, and these became permanent in the literature. The sportsmanlike tendency of the surgeon-anatomists of the period, with reference to elaborate illustrations at their own expense, is evidenced in the atlases of Lieutaud (1742). Didactic illustration in oil painting was done for the first time and on a grand scale by Gautier d'Agoty (1759). The Paduan tradition of comparative anatomy was revived by Vicq d'Azyr (1773).

The crowning achievement of France in physiology was the work of Lavoisier and his associates on breathing (1775-91). The work of Réaumur on regeneration in animals, on digestion in birds and on thermometry was also of basic importance. In 1775, Théophile de Bordeu, in his *Analyse médicinale du sang,* adumbrated the correlation of the internal secretions of the ductless glands for the first time.

The first classic on dentistry, *Le chirurgien dentiste* of Pierre Fauchard, was published in 1728. The second edition (1746) contains his original account of pyorrhœa alveolaris and the use of orthodontal procedure in malocclusion.

The first great psychiatrist of France, the apostle, in fact, of sane and humane treatment of the insane, was Philippe Pinel, who, with the consent of the National Assembly, made an epoch on May 24, 1798, by striking off the chains from 49 insane patients at Bicêtre, an event commemorated in the well-known painting of Tony Robert Fleury. In the 18th century, insanity was not regarded as a mental disorder, like a disease of the brain, but as a mysterious incurable affliction, usually the result of sin, hence a disgrace rather than a misfortune to the individual and his family. Excitable patients were chained and an asylum was a cross between a prison and a poor-house. Pinel's work, including his clear separation of mania, melancholia and dementia, is the starting point of the scientific treatment of the insane as sick patients in hospital.

Thus in the 18th century, there was everywhere a remarkable versatility in medical achievement. More and better work was done than formerly, due, perhaps, to the fact that the period before the Revolution was relatively quiescent. After thirty years of warfare between two bankruptcies, the foreign policy of France under Louis XV and his minister Fleury was to cultivate masterly inactivity, lie doggo and let the other fellow do the fighting, until Pompadour involved France in the Seven Years' War with Frederick the Great. As with Spain in the same period, the consequence of this *faire la guerre* policy was the loss of all the colonies and the dominance of the Anglo-Saxon in North America. Contributions to medicine were made even by laymen in this period.

Conflict with received opinion rather than humanitarian interest in the blind caused Diderot to be thrown into prison at Vincennes after the publication of his *Lettres sur les aveugles* (1749) which was suppressed. In those days, the blind, the deaf, the halt and the lame were regarded as objects of derision. Disgust at a burlesque public concert by the blind led the mineralogist Hauy to found a national Institute for them in 1786 and

to print books for them with raised characters. His *Essai* of 1786 was the point of departure of all modern endeavors. In like manner, the Abbé de l'Epée founded a school for deaf mutes in Paris (1755) and left an unfinished dictionary of deaf and dumb signs, completed after his death by his successor, the Abbé Sicard. Diderot wrote for the *Encyclopédie* (1752-72), over which he labored for over two decades, 18 articles on medicine, 10 on botany and 10 on natural history. Voltaire contributed to his *Dictionnaire philosophique* (1764) some 30 articles of medical or medico-historical interest. The *Émile* of Rousseau (1762) albeit condemned by the French and the Swiss governments, was not without its effect upon the basic idea of infant welfare. From Fontenelle's *Dialogues des morts* (1683) to the time of that arch *mauvais sujet* of medicine, La Mettrie, there was a continual run of satire on physicians and their ways. La Mettrie, a most industrious polyhistorian, made a translation of the works of Boerhaave, now forgotten. His satirical *Politique du médecin* (1746) was condemned and publicly burned by order of the Parliament of Paris. He followed it up with two medical comedies, *La Faculté vengée* (1747), *Les charlatans demasqués* (1762), and a satire on the leading physicians of Europe, *Ouvrage de Penelope ou le Machiavel en médecine* (1748), to which he had the impudence to add a supplement, with key (Berlin, 1750). He attained the extreme limit of crass materialism in *L'homme machine* (1748) dedicated ironically to Haller, *L'art de jouir* (1751) and *Vénus métaphysique* (1752), which, like Diderot's *Le rêve de d'Alembert* (1769), reflect the dissolute spirit of the Regency and the dissolving social forces implicit in the Revolution.

Apart from the light-footed irony of Fontenelle and Molière, clowning about medicine, is as a rule, deadly in its dullness, for the sufficient reason that, whatever the antics of doctors, medicine, as dealing with disease, injury and death, is not, in itself, a funny subject[8].

The Revolution and the Napoleonic Wars meant not only the break up of the social order, but also a release of energies at the time unpredictable. A chronologic arrangement of French literature, from the *Atala* of Chateaubriand (1801) to the end of the century, each year dating a classic, illustrates this *carrière ouvert aux talens,* just as the literature of the 20th century, illustrates, year by year, the gradual decadence and decomposition of the old order of

[8] The *ne plus ultra* of clowning is perhaps attained in the colored illustrations of the recent reprint of Littré's Hippocrates, with introduction by Prof. Henri Roger (1932). The attendant *mīdinettes,* who officiate as nursing personnel to the grim sage of Cos, have just stepped out of *La vie parisienne.*

things before the World War. A chronology of French medical achievement, corresponding with these entries from 1801 to 1932, is so extensive and complex that to attempt to give any account of it would be bewildering. One can only indicate the broad general outlines and trends of development. While Chateaubriand is publishing *Atala* (1801) and the *Génie du Christianisme* (1803), Pinel issues his classic on insanity, Bichat starts an epoch with his books on the descriptive anatomy of the tissues and membranes, Dupuytren founds the Société anatomique de Paris, the Bulletin of which has to this day remained the repository of French pathology. From this time on until the middle of the 19th century, Paris remains the world center of medical teaching. The clinical medicine of the future is made in the Paris Faculty, holding its own, along with the surgical tradition of the 18th century, until the Franco-Prussian War and well beyond it. The changes apparent through the different decades are these. During the romantic literary period, which dates back to the *Paul et Virginie* of Saint Pierre (1798), the period of Mme. de Stael, Benjamin Constant, Lamartine and Alfred de Vigny, the leaders of French medicine are Corvisart, Bretonneau of Tours, the two Breton clinicians, Laennec and Broussais, who with Louis, Andral, Chomel, Piorry, Bouillaud are to be the teachers of many outstanding physicians of England and our own Eastern cities. Along with these Bichat, the physiologists Flourens and Magendie, Napoleon's army surgeon Larrey, Dupuytren, Boyer, Lisfranc and Nélaton. The July Revolution of 1830 ends the Romantic movement. Spengler signalizes the appearance of *Le Rouge et le Noir* of Stendhal, in 1830, as a turning point in European literature, although Stendhal shrewdly observed: "I shall be appreciated toward the year 1900." Be that as it may, the mild, sentimental species of romantics give place to more picturesque and self assertive types, such as Dumàs père, Victor Hugo, Gautier, Banville, Musset and Balzac; but while Broussais is still going strong, albeit to empty benches, Laennec gives place to Trousseau, the tyrannic Dupuytren

to Nélaton and Malgaigne, and there is no particular change until the middle of the century, when Trousseau becomes clinical overlord of the Hôtel Dieu and Pasteur and Claude Bernard begin the new epoch of experimental medicine. In 1839, when de Tocqueville is finishing his Democracy, Stendhal publishing *La Chartreuse de Parme* and Mérimée just beginning *Colomba,* Bouillaud is working on rheumatic affections of the heart, Cruveilhier on his great atlas of pathology, Cuvier on his Animal Kingdom, Gavarret on medical statistics and Poiseuille on another new departure, the viscosity of the blood. Through the late forties and the fifties, Claude Bernard and Brown Séquard are experimenting on the foundations of endocrinology, Duchenne is founding a peerless neurological tradition, which is to last unto the team-work of the Salpêtrière group during the World War, long after the great clinical tradition of Laennec and Louis had died out. Pasteur and Claude Bernard dominate the scene to the end of their lives. In 1857, when Flaubert publishes *Mme. Bovary* and Baudelaire, *Les Fleurs du Mal,* Bernard has demonstrated the glycogenic function of the liver and Pasteur his views on fermentation. In 1862, Victor Hugo publishes *Les Misérables* and Flaubert *Salammbo,* while Charcot takes charge of the Salpêtrière, Paul Broca demonstrates motor aphasia, Koeberlé performs ovariotomy in Strassburg, Pasteur works on spontaneous generation, Daremberg, Chéreau, Menière, Raynaud are very active in the history of medicine and Littré prepares the first volume of his Dictionary of the French language, completed in 1872. In 1871, Zola begins the Rougon-Macquart series, and now we have a new school of writers, the Goncourts, Barbey d'Aurevilly, Villiers de l'Isle Adam, Rimbaud, Paul Verlaine, Maupassant, Bourget, Henri Becque, Loti, tending toward the ultra-realistic or the fantastic. To the end, Charcot is the exotic dominating figure. The clinical output is mainly neurological. Laveran discovers the parasite of malarial fever, Fournier's clinic has become a world center for venereal diseases, Pasteur has become a virtual physician through

his preventive inoculations against anthrax and hydrophobia and the medico-historical tradition is still active in spots. Toward the end of the century, Zola publishes *La Debâcle* (1895), and we have Curel, Bergson, Barrés, Rostand, Brieux, André Gide, Jules Romains, Anatole France, who hold their own through the relative mediocrity of the 20th century. On the eve of the War, Proust publishes *Du côté de chez Schwann* (1913), signalizing a new trend. French neurology retains its splendor through the war, two able physiologists are prominent, Gley and Charles Richer, author of *L'homme stupide,* and during the war period, the surgeons Tuffier, Morestin, Leriche, Lecène and Carrel.

Stendhal said: "To be a good philosopher, one must be clear, dry, without illusion. A successful banker has part of the equipment necessary to make discoveries in philosophy, namely to see things exactly as they are." In other words, the dry, factual, impersonal manner of an official or military report, which Stendhal imported into the writing of imaginative fiction, was the norm to which scientific and medical literature had been tending for centuries, even as consecutive thought among prehistoric and primitive savages had to wait upon the development of speech and the organization of language. Where La Rochefoucauld, Vauvenargues, Chamfort or Joubert could say more in a single sentence than whole stodgy volumes of duller men, so were the older medical writers apt to be "inebriated by the exuberance of their own verbosity," to the extent of being unreadable. Even Bichat, whose inspiring effect upon his generation has been eloquently commemorated by George Eliot in Middlemarch, was too diffuse, in consequence of his furious ardor to accomplish all he could in the face of approaching death. Laennec, the impetuous, ebullient Breton, who lectured in Latin on occasion for the benefit of foreign students, was sometimes intemperate and unjust in denouncing the opponents of the stethoscope (mediate auscultation), but could write with beautiful precision. He likened his bitter Breton rival, Broussais, to Paracelsus, on account of his inarticu-

late gropings toward a true theory of disease. Laennec has been characterized by Mauriac as nearer to Pascal or Pasteur than to Descartes or Claude Bernard:

"I attach no importance to this observation, which may be erroneous. It seemed to be as I have recorded it, but a phenomenon of this kind is not evident enough to be registered as an accurate statement of fact."

"The observer should be scrupulous in his assertions. A single error in the physical sciences can drive many into a blind alley, to be corrected later by years and volumes of research only."

Laennec regarded hypotheses as

"the mere scaffolding of science, to be utilized as an algebraic x", but not as a Procrustean bed, and constantly warns his pupils to be on their guard against "the errors which constantly arise from the observer's inexperience, from the day to day inequalities of his aptitude, the illusions of his senses and the difficulties inherent in the method of observation he employs."

Claude Bernard, on the other hand, was like Littré, a follower of Auguste Comte. The same cold positivism which makes the poems of Littré seem like the traceries of hoar-frost led Bernard into the colossal error of his career, his denial of the role of microorganisms in fermentation. At the same time, Bernard's positivism engendered such terse and luminous apperceptions as these:

"Observation is a passive science, experimentation an active science."

"A discovery is an unforeseen relation not confirmed in theory, for otherwise it would have been foreseen."

"In science, the thing is to modify and change our ideas as real knowledge advances."

"True science teaches us to doubt and, in ignorance, to refrain."

Charcot has the right clinical approach when he says that:

"In the last analysis we see only what we are prepared to see, what we have been taught to see," when he inquires "how it is that one fine morning Duchenne discovered a disease that probably existed in the time of Hippocrates" and goes on to explain that new facts always leave us cold, "because our minds have to take in something which deranges the original order of our ideas, but we are all of us like that in this miserable world."

Of modern medical literature of a readable character, one might recommend in brief:

The Mémoires de médecine militaire (1812) of Larrey, the Correspondence of Bretonneau with his pupils Velpeau and Trousseau, edited by Paul Triaire, Trousseau's own *Clinique médicale de l'Hôtel Dieu*, Claude Bernard's *Introduction à la médecine expérimentale*, Charcot's *Leçons du Mardi*, the contributions on medical art in the *Nouvelle Iconographie de la Salpêtrière*, the witty biographical sketches in *Nos grands médecins* by Horace Bianchon, otherwise Maurice de Fleury, *L'homme stupide* ("Idiot Man") by that original physiologist, Charles Richet and the acute criticisms of modern medicine by Pierre Mauriac in *Aux confins de la médecine* (1926) and *Nouvelles recontres* (1930).

Scores of cultivated French physicians have written *vers de société*, but the serious poetic output of medical men, as evidenced by *Le Parnasse médicale français* (1874) of Chéreau, is mediocre[9]. A solitary exception would be Henri Cazalis (1840-1909), who was called *l'Hindou du Parnasse contemporain*, on account of his predilection for Oriental themes and resembles Leconte de Lisle in his pessimistic tendency (*Livre du néant, Melancolia*). He translated the Song of Songs and the quatrains of al-Gazali. The number of recent novels and plays about medicine and by medical men is legion. I know of only two French medical plays of consequence: *L'épidémie* of Octave Mirbeau and Jules Romains' *Knock*, and, in both, the satire is transferred from the doctor to the patient and the public. André Couvreur, a graduate of the Paris Medical Faculty, has published a long row of medical novels, the most amusing of which is *Caresco le surhomme*, a satire on the gynecologist Pozzi and the outworn mania for cutting out women's ovaries by the thousand.

With the publication of Littré's bilingual Hippocrates (1839-61) and of Malgaigne's three volume edition of Paré (1840), there began a steady outflow of serious investigation in the history of medicine, which continued through the seventies, with a second upthrust in the nineties.

Malgaigne, who, with Pétrequin, was the contemporary authority on Hippocratic surgery, was defined by Billings, as "the greatest surgical historian and critic who ever lived." The *Catalogue des sciences médicales*

[9]The best poem in the collection is the spiritual copy of verses by Philippe Ricord on the immortality of the soul.

of the Bibliothèque impériale is an historical subject-index of items taken mainly, it is said, from the library of Littré himself. An author-index would be invaluable. Daremberg edited Rufus of Ephesus on the pulse (1848), a bilingual of Oribasius (1851-76), the Four Masters (1854), Celsus (1859), vernacular anthologies of Galen (1854-6) and Hippocrates (1855), wrote on Homeric medicine (1865), Hindu medicine (1867) and medicine in Greek literature (1869), culminating his labors with his two volume history of medicine (1870), which held the field for a long time. Prosper Menière wrote learnedly on medicine in the Latin poets (1858), medicine in Cicero (1862) and the consultations of Mme. de Sevigné (1864). Maurice Raynaud's book on medicine in the time of Molière (1862) passed through two editions. Achille Chéreau, tyrannical Librarian of the Paris Medical Faculty, was its historian (1878), as also of French medical journalism (1867), the plague in Paris (1873), the guillotine (1873) and the six confinements of Catherine of Medici (1875), also the biographer of Coitier (1861), Mondeville (1862), Renaudot (1878) and Servetus (1879). He buried an enormous amount of valuable research as "Ephemérides médicales" in the columns of *l'Union médicale* (1866-76).

In the later period, Paul Dorveaux, librarian of the École supérieure de pharmacie of the University of Paris, made a valuable catalogue of French dissertations on pharmacy (1891-95), translated the *Antidotarium* of Nicolaus of Salerno (1896) and the *Circa instans* of Platearius (1913), also edited the *Myrouel des appothicaires et pharmacopoles* of Symphorien Champier (1894) and the rhymed *Promptuaire* or herbal of Thibault Lespleigney (1899). The medical zoologist Raphael Blanchard made a new departure in his *Épigraphie médicale* (1909-15). Jeanselme, dermatologist and syphilographer and prominent in the investigation of tropical diseases, has concentrated on Byzantine medicine and Menétrier, professor of history of medicine in the Paris Medical Faculty since 1919, has followed up French medicine, to which the *Bulletin de la Société d'historie de la medécine* (1902-32) is mainly devoted. Wickersheimer, librarian of the University of Strassburg, resembles Chéreau in his close and accurate investigation of minutiæ of all kinds. His major productions are his graduating dissertation, an unrivalled history of French medicine in the Renaissance period (1905), his catalogue of French medical periodicals from 1679 to 1856 (1908), his edition of the *Anatomie* (1345) of Guido de Vigevano (1913), his history of the Paris Medical Faculty, as conveyed in the Commentaries of 1395-1516 (1914), and his two volume catalogues of the Libraries of the Academy of Medicine (1919) and of the University of Strassburg (1922). Augustin Cabanés, author of a superb history of military medicine (*Chirurgiens et blessés, 1918*), was inclined to frivol and thus frittered away a good deal of time and labor on the trivial anecdotage and "indiscretions of history." But he was the best informed of all medical historians in these details, and some of his researches, such as *Moeurs intimes du passé* (8 vols.), *Grands neuropathes, Les évadés de la médecine,* are readable. René Semelaigne, in *Alienistes et philanthropes* (1912) and *Les pioniers de la psychiatrie*

français (1932-3) has produced a record comparable with Kirchhoff's *Deutsche Irrenärzte*. *Les malades de l'esprit et leurs médecins* (1930) by M. Laignel Lavastine and Jean Vinchon is another recent essay in this kind.

French medical lexicography was extremely specia'ized in the 18th century. A lexicon of Latin and French terms by Elie Col de Villars (1741) was accompanied by a long series of terminologies of anatomy (Peras, 1753; Tarin, 1753; Dufieu, 1766; Vicq d'Azyr, 1786); surgery (Levacher de la Feutrie, 1767; Antoine Louis, 1772; François, 1773); drugs (Nicholas Lemery, 1714; Juliot, 1758); prognosis (Tennetar, 1770), and semeiology (Tennetar, 1777). The medical dictionary of Nysten (1810) was revised in its tenth edition (1855) by Littré and Robin and attained its 21st edition in 1905. The *Larousse medécale illustré* of Galtier-Boissière appeared in 1912 and a war supplement of military medical terms in 1917. An eleven-volume dictionary of physiology published by Charles Richet in 1894-1925 is, in reality, an encyclopaedia. The great monument in this kind was the 100 volume *Dictionnaire encyclopédique des sciences médicales* (1864-1900) of Amédée Dechambre which is still a useful repository of medical biography. The most exhaustive and accurate bibliographies of the great physicians of the past are to be found in the *Biographie médicale* of A. - J. - L. Jourdain, published in Paris (1820-25) by Panckoucke and known among doctors as "Pan-cake".

The most salient trait of French medicine, by and large, would appear to be the extraordinary versatility of the many physicians who have taken up scientific, literary and artistic pursuits as hobbies, and, by the same token, the tendency of such men to drop one scientific problem for another, with no apparent regard for the potentialities of a worthwhile theme. In this group would naturally fall the physicians listed by Cabanés as *les évadés de la médecine*, doctors who have abandoned medicine for some other calling. In science, the versatile men, the explorers of untried fields were classed by Ostwald as Romanticists, those who never turn out a finished product, but leave behind them many loose ends for others to follow up and complete. One cannot blame Petit or Mestivier, for instance, if they did not repeat their risky operations on the mastoid (1736) or the appendix (1759), nor Baillarger if his clear perception of manic-depressive insanity as *folie à double forme* (1853-4) had to wait half a century for the conclusive synthesis of Kraepelin. But what of Dutrochet who made a clear statement of the cell theory (1824), fourteen years before Schleiden and Schwann (1838-9) and of

osmosis (1827-35) at least nineteen years before Graham (1854)? An examination of the vast output of this gifted investigator reveals the fact that, during the years of his scientific activity, Dutrochet was constantly switching from one important line of investigation to another and so failed to duplicate the advance he had made in osmosis or even to demonstrate his reasoning about the cell doctrine, which was more accurate, in its time, than that of either Schleiden or Schwann.[10] The great men of science in any country, however, are those who, like Paré or Laennec or Pasteur or Bernard, have displayed good generalship in developing a line of thought to its ultimate consequences.

F. H. GARRISON

[10]See, on this head, A. R. Rich: Bull. Johns Hopkins Hospital, Baltimore, 1926, XXXIX, 330-365, and J. Florian: Nature, London, 1932, CXXX, 634.

Symposium: Recent Studies on the Effects of Tobacco in Man

RECENT IMMUNOLOGIC EXPERIMENTS IN TOBACCO HYPERSENSITIVITY*

(ABSTRACT)

Marion B. Sulzberger

My teachers, here and abroad, my readings, experiments and observations have imbued me with the firm conviction that we are but at the beginning of the era of the practical use and value of the skin test. And I seem to find, on all sides, possibilities for its further application.

Roughly a year and a half ago, I had the opportunity of discussing a case of beginning thromboangiitis obliterans with an eminent specialist in that disease. As chance would have it, I had already found the patient excessively skin-hypersensitive by means of patch tests with both butesin and picric acid. It was, therefore, almost inevitable that it should occur to me that thromboangiitis cases should be skin-tested with tobacco, as well as with other allergens. Isolated cases of tobacco hypersensitivity of different types have been known for some time. Since the case reported by Stauffer in 1930—a case which I had the opportunity of studying together with the author in Aarau, outside of Zürich—I have been engaged in skin-testing with tobacco and nicotine solutions. In view of all this and the well-known theory of the clinical role of tobacco in thromboangiitis, it was natural for me to make the suggestion that these cases should be skin-tested with tobacco. The method of experimental procedure was then arranged and agreed upon, and this has led me to the recent studies in tobacco allergy.

---

*Delivered before a Stated Meeting of the Academy, February 2, 1933. Some of the experiments mentioned herein were carried out at Montefiore Hospital; and some, through the courtesy of Dr. Halsey, were performed at the Department of Dermatology of the Post Graduate Hospital (Director, Dr. George Miller MacKee).

It surely does not require a lengthy argument to convince an audience that if tobacco is an active allergen, it must be a most important one. There is probably no other plant which is so omnipresent on the face of the earth, for where it is not grown, it is imported. In civilized communities, contacts with this allergen are unavoidable. It pervades our clothes. Our pockets are full of its dust. Our homes, our clubs, our public meeting places and our conveyances are constantly being filled and refilled with tobacco smoke and tobacco dust. And, in addition to this, the actual users of tobacco enter into the most intimate contact with the allergen. Tobacco is snuffed and chewed. It is smoked; and, in some parts of the world, even eaten and drunk (notably by certain tribes in South America).

In the United States alone, in the year 1932, it is estimated that the value of the tobacco consumed exceeded $1,350,000,000.—Due to its tobacco industry, the city of Winston-Salem paid higher Federal taxes in that year than any city in the United States, with the one exception of New York. These figures illustrate how tremendous a quantity of tobacco allergen is being distributed and consumed.

When we take all this into consideration, together with the fact that the tobacco allergen—in the few investigations thus far reported—seems to show a marked predilection for sensitizing the vascular system, we arrive at a comprehension of the almost incalculable possibilities which must impel us to the intensive study of this whole question.

It is obvious that when we have proven that the vascular system is involved in reactions of hypersensitivity to a circulating allergen, the number of diseases which must be studied from this new angle is far greater than we should, at first, suppose possible. For reactions of hypersensitivity in the blood vessels in response to circulating allergens may be productive of end-results of two distinct types: 1) changes in the blood vessels themselves; and

2) changes, based upon irregularities in the distribution of blood, in the organs which they supply.

In the first group we must naturally include all types of thrombotic, spasmodic and inflammatory responses in the vascular system. Not only thromboangiitis, but coronary sclerosis and atherosclerosis, angina pectoris and migraine must be envisaged from this viewpoint and must, therefore, be skin-tested. I do not consider it necessary to lengthen this list here.

And of the second group, I shall mention only such divergent conditions as peptic ulcer, optic neuritis, iritis and the acro-asphyxias.

Far-reaching as may be the effects of tobacco as an allergen and multitudinous as the diseases of specific tobacco sensitization may prove to be, I believe that the *underlying immunologic conceptions here involved are of even greater importance.*

It is for this reason that I wish to recapitulate the basic principles underlying the recent hypothesis of thromboangiitis being a localized specific vascular hypersensitivity to a circulating allergen; and that this hypersensitivity is demonstrable by skin-tests. You will permit me to repeat—when necessary in the course of this review—many things already expressed in some of my previous publications.

The question of tobacco hypersensitivity and the important diseases it may cause gives me a welcome opportunity for calling attention to immunologic conceptions studied and stressed in connection with other allergens and other diseases. Some of these conceptions belong to general immunology, while others are more particularly to be studied in *skin* diseases due to hypersensitivity.

The first concept is that of *localized and circumscribed fixed specific hypersensitivity.* I believe that although phenomena of this type exist in every form of allergy and in every organ, they are best observed in the skin and are most clearly evident to the immunologically trained dermatologist.

For example, I first studied this manifestation in mycotic eruptions. In these—as is now well-known through the work of C. M. Williams, Saeves, W. Jadassohn, Peck and others—it is frequently to be observed that circulating allergens originating from foci on the feet, although entering the blood stream and disseminated through the entire body, repeatedly cause eruptions only upon the fixed and localized hypersensitive (?) areas of the hands. Another and perhaps even more striking example is to be found in the fixed drug eruptions, such as those due to phenolphthalein. Here the drug, taken by mouth, enters the blood stream and must be distributed approximately equally to all organs of the body and all areas of the skin. And yet, in the hypersensitive individual, it frequently occurs that only one small skin area—a round or oval, sharply circumscribed patch—reacts to the circulating drug. All experienced dermatologists have seen cases in which almost incredibly rapid and violent reactions of a patch of skin on the glans penis alone occur within a few minutes of the ingestion of phenolphthalein.

In experimental studies on such a case, Fred Wise and I were able to show that the reaction of the skin is probably caused to localize in a sharply demarcated oval or round area and in that area alone for a certain reason. And this reason may be that either a small artery or a small nerve is responsible for the hypersensitivity; and only that skin field reacts which is fed by the tributaries of this artery or supplied by the branches of this nerve.

In the case of some tuberculids and in bromodermas, there is a striking similarity to the findings of the localized vascular hypersensitivities which must be pre-supposed in thromboangiitis. For in certain of these eruptions, the lower legs are most frequently the seats of the reaction; and in the case of some tuberculids it has even been demonstrated that the inflammation, in all probability, begins in the vasa-vasorum. In fact the observations of vascular reactions in allergy have been common knowledge in the immunbiology of the skin since a great

many years (see mention in the works of Philippson (1901), J. Jadassohn, etc.). The wheal itself is evidence of *vascular* damage, and petechiae and purpuras are among the common vascular phenomena in allergic skin eruptions. Erythema nodosum and erythema induratum, as well as periphlebitis necroticans are dermatological examples of what is often a localized vascular hypersensitivity in the lower legs.

These few examples must suffice to prove that circulating allergens can cause repeated reactions in small circumscribed areas of the blood vessels and in these alone. It is, therefore, possible that in one case, the hypersensitive area may be in the blood vessels of the leg; in another, in a coronary artery; and in still other cases, in stretches of vessels supplying other organs.

I realize that the analogies I have cited offer no explanation as to why such localized vascular hypersensitivities occur, but merely prove that they are rather frequent immunologic phenomena which may be noted in a great variety of diseases of hypersensitivity.

The second immunologic concept necessary to the understanding of thromboangiitis as a disease of hypersensitivity, is that of the *predilection of certain allergens to sensitize certain tissues,* often to the exclusion of all other tissues. We might even say: Each allergen has its favorite point of attack.

For example, we all know that pollens which are aspirated generally cause reactions in the nose and conjunctiva; while animal emanations, such as horse-dander, aspirated in the same manner, usually cause sensitizations of the bronchioles.

The skin again offers many illuminating examples of this selectivity. There are certain circulating allergens—such as quinine and formalin—which attack the epidermis alone; while others—strawberries and shellfish, for instance—usually sensitize only the blood vessels of the upper layers of the cutis. It is for this reason that we dif-

ferentiate between *eczematogenous* and *urticariagenic* noxae. I have already mentioned certain sites favored by drugs in their sensitizations—phenolphthalein eruptions on the penis and bromodermas on the legs.

Further experiments are surely necessary to confirm the third principle, namely, that *far-reaching and permanent organic damage may be caused by reactions of hypersensitivity* in shock tissues. If our conception of thromboangiitis and other vascular diseases of this type as *reactions of hypersensitivity* is to prove correct, then we must postulate such organic changes as the results of allergic reactions. The Arthus phenomenon is one in which a typical hypersensitivity exists, combined with circulating antibodies, and in which permanent damage results. I believe that the fibrotic changes found in chronic asthma and the pale turbinates found in chronic allergic coryzas may, through future study, prove to be based upon organic vascular changes due to allergy. It seems to me only logical that repeated assaults of any kind must—sooner or later—cause organic changes in which scarring and fibrosis and, within the blood vessels, thrombosis may well be the permanent sequelae.

In dermatology we have learned that no one type of tissue reaction is characteristic or pathognomic of hypersensitivity. Some allergic skin reactions (bromides, iodides) produce pus; and others cause serous exudations. Some allergic manifestations of the skin are typified by evanescent wheals, while others bring about permanent damage. I have seen chronic recurring angioneurotic edemas result in permanent injury to the lymphatics and thereby cause elephantiasis. Many drug eruptions have proliferative and hypertrophic lesions which continue in their growth for incredibly long periods of time after cessation of the ingestion of the drug. In some of these, the histopathology is even sarcoma-like and fatal cases belonging to this category have recently been reported due to bromides and iodides. These examples seem sufficient to illustrate that some allergic shock reactions cause permanent damage;

and that, therefore, this concept, should it be applied to thromboangiitis (and even perhaps to coronary sclerosis or generalized arteriosclerosis) is not as revolutionary as it may, at first, seem.

The fourth fundamental concept which has led me to this method of investigation in thromboangiitis and other vascular diseases, is the observation that the *skin is a test tissue or indicator of supreme value in the study of all manner of hypersensitivities of internal organs.* This fact is now becoming so generally recognized that I need not dwell upon it at any length. Just as a localized hypersensitivity of the bronchioles is often associated with a skin hypersensitivity to the same substance; or, as a localized sensitivity of the nasal mucosa or conjunctiva may often be demonstrated by skin tests; or, as an echinococcus of the liver or ascaris infestation of the intestines or tuberculous infection of the lungs cause patients to have positive skin responses to the respective extracts; so there is every reason to believe that diseases of hypersensitivity in any organ or part of an organ may be combined with a skin hypersensitivity to the offending allergen.

It therefore follows that every disease which has the earmarks of an idiosyncrasy or hypersensitivity must be studied, in the future, by means of skin tests; and in this study not only intradermal tests must be employed, but all the various types, including patch tests and tests eliciting reactions of the tuberculin type.

There are two other fundamental principles today widely recognized even outside of the circle of those particularly concerned with immunology. I need, therefore, make only brief mention of these two principles of *idiosyncrasy* and *of the harmless nature of allergens to those not sensitized.*

It is certainly well known to all of you that idiosyncrasy designates an aberrant form of reaction on the part of an individual to certain contacts which elicit no manifest reactions in normal individuals. In idiosyncratic reactions, the effects appear to be out of all proportion to the

quantities of the causative substances. Incredibly small amounts may often suffice to elicit the most severe effects; and the amounts required to elicit such reactions vary greatly, even from one idiosyncratic individual to another. These quantitative fluctuations are far beyond those which one is accustomed to deal with in pharmacologic and toxicologic effects; and the qualitative result is different from the pharmacologic or toxicologic action of the substance concerned.

Thromboangiitis corresponds to the rule in *idiosyncrasy,* for one individual may get thromboangiitis from smoking one cigar or cigarette a day; whereas, in another individual, twenty cigars or cigarettes daily may be necessary; while a third group of individuals—fortunately in the overwhelming majority—may smoke to apparent excess and yet with impunity.

It is in this third type of so-called normal individuals that we see demonstrated the harmless nature of allergens to those not having the idiosyncrasy of being hypersensitive. In the concentrations normally encountered, eggs, bread and milk certainly appear to be the most innocent and innocuous of substances, and yet they have caused reactions of the utmost severity and have even brought about death in idiosyncratic individuals. The anaphylactic shock of guinea-pigs offers a classical example of the fact that infinitesimal traces of a substance, previously harmless, can cause sudden death to the hypersensitive.

It follows that if and when we regard the deleterious effects of tobacco in the light of idiosyncrasy and hypersensitivity, it is no longer necessary to attribute these harmful effects to the action of a poison or alkaloid. In other words, we are not obliged to attribute to *nicotine* all the harmful effects known to be caused by tobacco.

This conception of hypersensitivity to tobacco offers an explanation for the many heretofore irreconcilable clinical and experimental observations of the differences between poisoning by nicotine alone and damage due to tobacco.

It may also explain why, in spite of strong clinical evidence that tobacco is the cause of certain pathologic conditions in man, no experimentor among the many who have made the attempt, has been definitely able to reproduce the tobacco effect in animals. All of these former experiments were carried out on *toxicological* lines. We are now obviously proceeding to *sensitization* experiments in animals.

I have now outlined the fundamental immunbiological principles which led to my hypothesis that thromboangiitis obliterans is due to a vascular and localized hypersensitivity to a circulating allergen—namely, in most cases, to tobacco.

The question presents itself: How far have we been able to demonstrate the truth of this hypothesis?

How shall we interpret the findings that among the thromboangiitis patients we have tested, over 77 per cent had skin reactions to tobacco, whereas only about 36 per cent of other smokers reacted? Does it mean that we are justified in concluding that the disease of the blood vessels is due to a localized tobacco-hypersensitivity?

It appears to me that, if positive skin tests (and even the demonstration of reagins) were our only evidence, *we should not be justified in concluding* that tobacco is responsible for thromboangiitis. Positive skin tests to egg-white, for instance, and reagins to egg-white may be found in 50-80 per cent of all cases of infantile eczema. And yet clinical evidence speaks strongly against egg-white being the causative factor in most cases of this disease. I shall cite only two more examples of the many such discrepancies between the results of skin tests, the demonstration of reagins and the clinical findings. I select these two examples in conditions which I have observed or investigated myself. In ascaris infestations one finds almost 100 per cent positive skin reactions and circulating antibodies to ascaris antigen. And yet this seems to have no clinical meaning, for, in the great majority of these individuals, there are no manifestations of disease due to ascaris. As a second ex-

ample, Spain, Shahon, Sammis and I found that in disseminated neurodermites there is an extremely high incidence of positive skin reactions and of reagins to many different allergens and, *particularly, to silk.* In spite of this, the clinical and etiological significance of silk and of many of the other allergens cannot be proven.

It is, therefore, my belief that *both skin tests and reagin demonstrations with an allergen are of significance only in conjunction with and in support of clinical evidence pointing to the same substance.* I believe, however, that *this conjunction and mutual support is present in thromboangiitis obliterans.* The clinical observations—accumulated throughout years and incriminating tobacco—combined with the evidence of the positive skin tests to tobacco in this disease, can lead to only one logical conclusion, namely, that thromboangiitis is, in most cases, probably due to localized hypersensitivity to tobacco allergen and that this hypersensitivity can be studied and demonstrated by skin tests.

There are two more points I should like to mention here. One is that I do not believe that we are, as yet, justified in making as positive a statement as the above in cases of other localized diseases of the vascular system which happen to show positive tobacco tests. I refer, of course, to coronary disease, angina pectoris, etc., for here the clinical evidence is not as conclusive and the incidence of positive tests is not by any means as high. The second point is that if thromboangiitis can be caused by one circulating allergen, it must also be caused—less frequently—by other allergens. I am, therefore, now engaged in experiments upon *tobacco-negative* cases of thromboangiitis. I am testing these with other allergens to determine whether other substances than tobacco may not be the causative agents in some cases of this disease.

In the first of such a series undertaken together with Drs. L. Mamelok and E. Feit, we tested 10 cases of thromboangiitis obliterans with tobacco and with 24 other common allergens. The results were as follows:

6 cases were positive to tobacco alone
1 case reacted to tobacco and to 4 other allergens
1 case gave no reactions
2 *tobacco-negative cases gave marked positive reactions to other allergens!*

None of the 10 *cases of thromboangiitis in this series had other allergies or familial histories of allergy.* I believe that this series substantiates the statement I have just made, namely: Tobacco is the principal allergen concerned in thromboangiitis, but *nevertheless cases of this disease exist which are not hypersensitive to tobacco, and these, in turn, may be found to be sensitized to other substances.* It was interesting to note, in this experiment, that all the allergens giving positive reactions belong to the group of the *inhalants* (dust, duck-feathers, chicken-feathers, kapok and cat-hair). I do not, at this time, wish to comment further upon the analogy between this respiratory absorption of these inhalants and the inhalation of smoke, nor upon the facility which this route offers for absorption into the pulmonary veins, thence to the left heart and to arterial dissemination and the direct sensitization of susceptible portions of the arterial system.

The next experiments which I undertook together with Drs. B. Scholder and E. Feit concerned the question as to whether a positive skin test to tobacco is to be regarded as evidence that sensitization through contact with tobacco has taken place. Should this be true, it may be expected that smokers will give a higher incidence of positive reactions than non-smokers. For, if tobacco sensitizes, although in some cases tobacco smoke or tobacco-dust laden atmosphere may suffice, those persons coming into intimate contact with the allergen through smoking will be more likely to become sensitized.

The results of these experiments were as follows:

In 95 cases of a hospital population, including both male and female smokers (but excluding thromboangiitis obliterans patients and all non-smokers) 36

per cent gave positive skin reactions to tobacco; 58 *non-smokers* in this same hospital were positive in only 16 per cent of the cases. (It is necessary for me to state that both of these groups contained the regular run of the hospital population, including cases of various forms of heart disease and some atopic individuals).

These figures, however, seem to be fairly characteristic of what may be expected in a general run of healthy individuals, for in a group of 38 persons without atopy or the slightest evidence of cardiac, vascular or gastro-intestinal disease, but who were all moderate to strong smokers, exactly the same proportion—36 per cent—had positive skin reactions to tobacco. It seems permissible to conclude from these figures that *skin reactions to tobacco are more frequently encountered in smokers than in non-smokers;* and that the *positive reactions may be considered to be due, in some degree, to sensitizations brought about by smoking.* (See Tables).

TABLE I

IMMEDIATE WHEAL REACTIONS TO TOBACCO IN A HOSPITAL POPULATION

(EXCLUDING CASES OF THROMBOANGIITIS OBLITERANS)

	Total Number Examined	Positives	Negatives	Percentage Positive
SMOKERS				
Males	58	20	38	34 +
Females	37	14	23	38 +
Totals—Smokers in hospital population	95	34	61	36 +
For comparison Totals in healthy smokers	38	14	24	36 +
NON-SMOKERS				
Males	13	1	12	8
Females	45	8	37	18 +
Totals—non-smokers	58	9	49	16
Grand total of smokers and non-smokers in hospital population	153	43	110	28 +

In view of the inexplicable preponderance of males and Semites among the thromboangiitis patients, it was necessary to ascertain whether this sex and race evidenced a higher percentage of positive skin tests than others. Our experiments along these lines gave the following results:

In the above-mentioned hospital population, male smokers were positive in 34 per cent of 58 examined, female smokers were positive in 38 per cent of 37 examined.

In another group, consisting of healthy smokers,
38 per cent of males were positive
36 per cent of females were positive.

When all of these persons were classified as to race, there were no essential differences between the Semites and other races—Jews had about the same percentage of positives as non-Jews.

Our experiments have, therefore, given *no clue as to why male Jews are more susceptible* to the type of tobacco hypersensitivity which is associated with thromboangiitis obliterans. We can only offer to ourselves the rather dubious consolation of recalling that there are other diseases which are more or less sex-linked, and still others which are more likely to affect the Semitic race. Of the former, I may mention hemophilia, certain forms of ichthyosis and perhaps erythema induratum.* While in the latter group, I should like first to recall the disease studied by our President—*Tay-Sachs disease*—then *pemphigus,* then to a lesser degree *diabetes* and *Kaposi's sarcoma.*

The next group of cases which we studied as to their skin hypersensitivity to tobacco comprised patients suffering from hypertensive and atherosclerotic heart disease and from chronic rheumatic cardio-valvular disease. Among these there were both males and females, smokers and non-smokers. The figures are as follows:

---

*The analogy is here striking; for this is a vascular hypersensitivity to the products of tubercle bacilli, occurring in the lower legs, and affecting, almost exclusively young women.

6 out of a total of 35, or 17 per cent were tobacco positive in the hypertensive and atherosclerotic group.

10 out of 38, or 26 per cent were positive in the rheumatic group.

In these two groups considered as one, 22 per cent gave positive skin reactions, as compared with 28 per cent positives in a total hospital population of smokers and non-smokers, including all diseases except thromboangiitis.

The conclusion to be drawn from these statistics is that the incidence of positive skin reactions to tobacco in the cases of heart disease investigated was no higher than that to be found in the general run of hospital patients. I wish to call attention expressly to the fact that we did not specifically investigate coronary disease or angina pectoris, as such.

I now come to the *only group in which we were able to demonstrate a much higher incidence of tobacco skin reactions* than in any other diseases heretofore mentioned and/or in any group of controls, namely, the 13 cases of typical *thromboangiitis obliterans* which we had available for this study:

10 of these 13, or approximately 77 per cent had from moderate to very strong reactions to tobacco. (See Tables).

As above stated:

The 2 of the 3 tobacco-negative cases which we tested further were found positive to other inhalant allergens, and 1 gave no reactions to the 25 allergens employed.

Of the 7 tobacco-positive cases which were tested with other allergens, 6 were found to react to tobacco alone and 1 to tobacco and some other inhalants.

TABLE II

COMPARISON BETWEEN HEALTHY MALE AND FEMALE SMOKERS IN REGARD TO IMMEDIATE WHEAL REACTIONS TO TOBACCO

	Total Number Examined	Positives	Negatives	Percentage Positive
Males	13	5	8	38 +
Females	25	9	16	36
Totals	38	14	24	36 +

TABLE III

COMPARISON BETWEEN IMMEDIATE WHEAL REACTIONS TO TOBACCO IN HEART DISEASES, IN A GENERAL HOSPITAL POPULATION EXCLUDING THROMBOANGIITIS OBLITERANS, AND IN THROMBOANGIITIS OBLITERANS

	Total Number Examined	Positives	Negatives	Percentage Positive
Hypertensive and atherosclerotic heart disease	35	6	29	17 +
Rheumatic heart disease	38	10	28	26 +
Total heart diseases	73	16	57	22
General hospital population	153	43	110	28
Thromboangiitis Obliterans	13	10	3	77

These figures permit but one conclusion. In the cases which we have investigated, *thromboangiitis is a disease accompanied by skin hypersensitivity to inhalants (in our cases* 12 *out of* 13 *had positive skin tests in this group) and, among these inhalants, tobacco plays the most important role* (77 *per cent positive*).

Taken in conjunction with the clinical evidence incriminating tobacco in this disease, and in consideration of the immunbiological principles as outlined, I believe it permissible to conclude that our findings are strongly suggestive that many cases of thromboangiitis may be due to localized and fixed areas of hypersensitivity in certain parts of the vascular system; and to reactions produced in these areas by circulating allergens—chiefly by tobacco.

The next group of experiments undertaken by Feit, Scholder and myself concern themselves primarily with questions which may possibly be of more practical interest.

The basic premise upon which the evaluation of the results of these experiments will rest is that, in diseases due to hypersensitivities to certain substances and with positive skin reactions to these substances, it may be regarded as axiomatic that the very constituent of this test substance which is found to cause the skin reaction, is also causative of the disease. In other words, if in a ragweed hypersensitive case, ragweed *protein* is found to elicit the skin reaction, it may be assumed that ragweed *protein*—and not ragweed oil and/or other fractions—has caused the disease. It must follow that that portion of the whole which gives a positive skin reaction is the one which is of clinical significance. It may be cited, in substantiation of this assumption, that, in addition to other supporting evidence, Coca and Grove have found that in a case of ipecac hypersensitivity, the ipecac protein caused both the skin reaction and the pathological condition, whereas the alkaloid of ipecac—emetin—neither caused the clinical manifestations nor elicited a skin reaction.

On this basis, it is permissible to attempt an analysis of tobacco with the object of ascertaining which fraction or fractions cause the skin reaction in diseases of tobacco hypersensitivity; and, thereby, to determine which fraction may perhaps be considered the cause of the disease.

In the mixture of known and unknown substances which is called tobacco, *nicotine* is the ingredient which has been most universally blamed. And yet, as stated, many investigators have called attention to the *discrepancies between the results of clinical and experimental nicotine poisoning and the effects due to contact with the whole tobacco.*

Employing the skin tests and the reactions with reagins as a new method for analyzing tobacco as to its harmful components, our first investigation had for its object to

ascertain whether nicotine or some other constituent or constituents of tobacco caused the reactions in the diseases of probable tobacco hypersensitivity studied:

13 cases of thromboangiitis obliterans
9 cases of other conditions in which there was clinical evidence incriminating tobacco as a cause
3 controls.

All were tested with practically denicotinized tobacco extracts (which were no longer toxic to mice) and a solution of nicotine sulfate (which was lethal to mice in doses of 0.2 c.c.).

In all of these cases but one, nicotine caused no reactions, while the tobacco extracts caused moderate to strong reactions in all cases but 4 of 25 investigated.

The reagins to tobacco which could be demonstrated in only 2 of these cases (1 thromboangiitis and 1 rheumatic heart disease) did *not sensitize to nicotine,* but *sensitized the skin of normal individuals to the "denicotinized" tobacco extracts.*

[I wish to call attention to the fact that our experimental results are in contradiction to that which has been reported by other observers in thromboangiitis. We could not convince ourself that reagins to tobacco (specific passive transference antibodies) were present in the majority of our cases].

One is, therefore, permitted to conclude that many cases of thromboangiitis obliterans and some of the other diseases similarly tested (see in Tables) and in which the clinical role of tobacco was evident, are in some way related *not* to a *nicotine* effect, but *to a reaction of hypersensitivity to a constituent or constituents of tobacco other than nicotine.*

TABLE IV

COMPARISON OF IMMEDIATE WHEAL REACTIONS TO DENICOTINIZED TOBACCO EXTRACT AND A 0.4% NICOTINE SULFATE SOLUTION. (ALL PATIENTS WERE SMOKERS)

	Patient	Diagnosis	Tobacco reaction	Nicotine reaction
1.	Rafalowitz	Thromboangiitis Obliterans	3 plus	0
2.	Nechanhus	" "	0	0
3.	Leibowitz	" "	2 plus	0
4.	Bloch	" "	0	0
5.	P. Torr.	" "	2 plus	1 plus ?
6.	Max Sil.	" "	3 plus	0
7.	Morris K.	" "	1 plus	0
8.	Ab. Her.	" "	1 plus ?	1 plus
9.	Rubin. Z.	" "	2 plus	0
10.	Sol. Blo.	" "	2 plus	0
11.	Sol. Alb.	" "	2 plus	0
12.	Alex. Lau.	" "	1 plus	0
13.	Barney Zu.	" "	0	0
14.	Harry Ber.	Rheumatic heart disease	2 plus	1 plus ?
15.	Abrah. N.	Angina and precordial pain	2 plus	0
16.	Haberman.	Hypertension and precordial pain	1 plus	0
17.	Louis Ka.	Substernal pain	1 plus	0
18.	Marion S.	Migraine and palpitation	1 plus	0
19.	Paul Hir.	Migraine, gastrointestinal upsets and neuritis	1 plus	0
20.	P. Ker.	Anginal pains	1 plus	1 plus ?
21.	Rosensch.	Arteriosclerosis	1 plus ?	0
22.	O. Irish.	Tobacco (?) neuritis	2 plus	0
23.	Ledford	Normal—cigarette smoker	1 plus	0
24.	M. Baker	Normal—cigarette smoker	0	0
25.	M. Scott	Normal—cigarette smoker	1 plus ?	1 plus ?

This finding may be of far-reaching and practical importance. First, it gives us an explanation of the discrepancies formerly noted between tobacco effect and nicotine effect. Second, it makes it probable that the attempt to "denicotinize" fails of its objective in cases of tobacco hypersensitivity. Denicotinized tobacco would possibly be just as harmful, in these cases, as tobacco with its full nicotine content. I do not wish to imply that nicotine poisoning *per se* does not exist; nor that there are not cases in which the nicotine brings about the deleterious effects. But, in those cases of hypersensitivity which we have studied, the

main evils may result from fractions of tobacco other than nicotine.

Once we have determined that "denicotinizing" tobacco does not necessarily render it innocuous in cases of hypersensitivity such as we have studied, it is obvious that we must seek new methods for discovering the truly harmful ingredient or ingredients of tobacco. And, of even greater practical importance, we must endeavor to perfect methods for eliminating or destroying the noxious component or components. I am now engaged in further investigations along these lines and here wish to report the results of only a few preliminary experiments:

We were able to demonstrate that skin reactions elicited by a) untreated tobacco extracts, b) extracts which had been treated with moist heat for 1 hour at 58 deg. Centigrade, and c) extracts which had been boiled for 1 minute—were essentially the same.

These 3 differently treated extracts also elicited reactions of equal intensity and size when they were injected into sites passively sensitized with reagins.

The active factor in the tobacco extracts is thus proven to be both thermo- and coctostable. This brings tobacco sensitization into even closer relationship with other plant sensitizations for the so-called pollen and plant "proteins" also retain their activity after similar treatment. It also suggests that the unchanged allergen can be present in the smoke.

It seems highly significant, in this connection, to point out that I have observed two other distinct types of allergic skin response to tobacco extracts. One is the *eczematous response* to *patch testing;* and the other, the *late reaction,* at the site of the intradermal injection reaching its acme after about 48 hours. The latter corresponds in its development and appearance to positive tuberculin and trichophytin reactions. I have found, in all manner of sensitizations I have studied, the immediate wheal, the eczematous and the tuberculin-like reaction to be phenomena which

occur independently of each other. By this I mean, a patient may have either any one, or two, or even all three of these types of reaction. They seem to be three entirely different manifestations of hypersensitivity without any obligatory interrelationship. And yet, in tobacco hypersensitivities, I have found that in all three types of skin reaction, the nicotine never elicited a response and the denicotinized tobacco extracts caused the reactions. (About 100 cases have now been tested and there was only 1 with a slight wheal reaction to nicotine. See Tables).

The significance of the eczematous reaction seems clear to me. I have found positive eczematous reactions to patch tests in the four cases of tobacco eczema I investigated and in no other of a large group of patients thus tested.

Practically all of our intradermally tested cases were examined after 48 hours for the presence of the tuberculin-like reaction. This was occasionally found and was sometimes relatively severe. At the present early stage of our investigations, we can advance no theory as to the significance of this type of allergic response to the tobacco allergen, for it occurred irregularly and in apparently haphazard fashion, both in normals and in the diseases studied.

I have two reasons for mentioning these different forms of skin reaction. One is to point out the necessity for further study of the tuberculin-like type of reaction; and the other is to confirm, once again, that the *sensitizing factor in tobacco is not the nicotine;* for, *just as was the case in the immediate wheal reactions, patients with positive eczematous or with positive late reactions were skin-hypersensitive to tobacco and not to nicotine.*

Extracts made from three different mixtures of tobacco were used on all of our cases. We found that of the positive cases tested, some reacted to only one of the extracts; some to only two; and some to all three extracts. In other words, any given tobacco-positive patient might prove sensitive to only a given mixture of tobacco and not sensitive to any other mixture.

One of our cases of tobacco eczema in a cigar-maker was particularly illuminating in this respect. This patient had an extremely strong reaction at the site of the patch test with a *shade-grown Connecticut wrapper,* whereas both the sites tested with Wisconsin filler and with the nicotine solution *remained negative.* These findings were confirmed by repeated tests.

Dr. Maximillian Ramirez has kindly permitted me to report his observations in a similar case. The patient suffered from a perioral eczema, which also affected the portions of his face which usually came into contact with the smoke from his cigarette. *Patch tests with tobacco from Chesterfield cigarettes were positive; patch tests with other brands were negative.* The patient had been smoking only Chesterfields; since stopping smoking the eczema has cleared up.

It is obvious that this new approach through the immunbiological analysis of tobacco to ascertain the sensitizing and/or harmful ingredient must be further continued and extended. One of the questions to be answered is: Do the harmful or sensitizing ingredients pass into the tobacco smoke in appreciable quantities? Our own experiments in this direction are not yet conclusive, but it seems probable that at least some cases are sensitized to substances contained in the smoke itself. I believe, however, that other individuals may be sensitized only to such constituents of the plant which do not pass into the smoke in quantities sufficient to be harmful. This belief is based upon the observation that some patients react to extracts made from the leaf and do not react to extracts prepared from smoke. Dr. Robert A. Cooke has permitted me to mention experiments which he carried out with smoke and with tobacco leaf extracts several years ago; and which, in some cases, elicited this divergence between the reactions to smoke and to leaf extracts.

It remains for me to inquire what practical results may have been approached or achieved through these immunbiological studies with tobacco.

Can we, in diseases in which tobacco hypersensitivity may be suspected, *determine by means of skin tests whether or not the patient may continue the use of tobacco with impunity?* I believe that the answer to this question is, unfortunately, *No*—and will remain *No*. For, while it is obvious that we must forbid the use of tobacco in cases in which there are positive skin reactions and clinical evidence incriminating the plant, I believe it will always be equally necessary to forbid the use of tobacco to individuals with clinical evidence of tobacco hypersensitivity but with negative skin tests. And this because, while the skin often indicates the state of hypersensitivity of internal organs, this is not always the case. It must, as yet, be considered just a lucky chance that a skin hypersensitivity so frequently accompanies an internal one to the same allergen. Cases must exist in which the internal sensitivity occurs alone and unaccompanied by skin sensitiveness; and these would prove negative to the skin test and yet suffer from the use of tobacco.

Another question which presents itself: How far have we proceeded towards determining the nature of the harmful action of tobacco?—I believe that we have achieved a considerable advance in this direction, for we have demonstrated in the diseases investigated, that the major harm is probably done by fractions of tobacco other than nicotine. This seems to change our whole approach to the study of tobacco effects, from the pharmacologic and toxicologic fields to the immunologic one.

This shift brings in its train new methods of investigating and therefore, perhaps, of solving old and baffling problems. As recently as September 1932, Friedrich Mueller stated in the Muenchener Medizinische Wochenschrift that it was *certain that the deleterious effects of smoking were mainly attributable to nicotine.* This toxicologic conception has hit upon many snags in the form of inexplicable observations and has certainly not been of heuristic value.

I believe and hope that with the immunologic concept—that *certain tobacco effects may be regarded as sensitiza-*

tions to allergens and not as poisonings—and through the new approach made possible by this allergic concept, we may be in *a better position to study many important and practical problems.*

We have commenced investigations upon several of these. The differences which have been observed in the same individual in his reactions to different mixtures of tobacco lead us to believe that *we may be able to ascertain, in each individual case, just which tobaccos are most likely to be harmful to that individual;* and which he may be permitted to continue using with least risk. We may also be able to discover *which particular tobaccos give the least number of positive reactions in the general run of individuals and thus, perhaps, determine which tobaccos are least likely to prove injurious.* For this purpose we are engaged in experiments with extracts made from a variety of tobaccos grown in different localities and under different conditions and treated in various ways; as well as with extracts of mixtures as found in the standard brands of cigars, cigarettes and pipe tobaccos.

And we are, naturally, subjecting our extracts to all manner of treatment—such as chemical procedures, ultraviolet and X-rays, etc.—in the hope of finding a method of destroying and eliminating the sensitizing fraction or fractions without damaging the tobaccos' aroma or flavor.

I can only hope that I have succeeded in bringing out the great potential significance of the immunologic approach to tobacco damage. Much work is to be done here, and many investigators may study this problem from various angles.

Before closing, I feel that mention must also be made that this new concept can and should be applied to many other diseases of unknown etiology, which bear the characteristics of idiosyncrasy.

For instance, I am now engaged in an investigation of alcoholic psychoses from the allergic viewpoint, together

with a psychiatrist who has particularly devoted himself to the study of these conditions. I most recently observed a case with a psychotic reaction following the drinking of small quantities of rye whiskey, and with a positive wheal reaction to rye allergen.

I am sure that some of you will think that I have exaggerated ideas as regards the use of skin tests. Perhaps this is true. But when I say that skin tests must and should be employed in the greatest variety of pathological conditions, I fully realize that they will meet with success in only a few. But these few successes will surely make the trouble and time expended worth while.

When I urge that many other diseases be studied from the immunologic-dermatologic viewpoint, I mean that these comparatively new methods should now be employed in the same spirit as we have been using bacteriologic, pharmacologic, histologic and other established approaches.

In the case of some vascular diseases of tobacco hypersensitivity, I believe that the new approach has already taught us that it is probably more correct to speak of tobacco as the *"noxious weed"* than to refer to it as *"My Lady Nicotine."*

TOBACCO SENSITIVENESS IN THROMBOANGIITIS OBLITERANS, MIGRATING PHLEBITIS AND CORONARY ARTERY DISEASE*

(ABSTRACT)

JOSEPH HARKAVY

The role of allergy in disease is an accepted fact. Protein hypersensitiveness as responsible in certain affections of the respiratory tract such as asthma, hayfever, in the gastro-intestinal tract due to foods, in the skin as well as certain forms of arthritis is generally accepted. Little if any investigation, however, has been done from the point of view of protein sensitiveness in one of the most important systems of man, the vascular. And yet animal anaphylaxis, the prototype of human allergy, is characterized by vascular shock such as spasm of the pulmonary artery of the rabbit and hepatic veins in the dog.

The experience which led to the present investigation concerned a patient who is sensitive to the spring and fall pollens and had recurring sinusitis throughout the year due to food sensitiveness. He was a moderate smoker of cigars and cigarettes. Because smoking was always followed by mild toxic symptoms he eliminated cigars. After two months of abstinence he partook of a cigar and fifteen minutes later went into shock characterized by vomiting, diarrhea and vaso-motor collapse. The pulse was rapid and irregular throughout the night. These symptoms disappeared completely the following day.

The sequence of events together with the history in this case were interpreted as being the results of sensitization to tobacco in an allergic individual who had never

*Delivered before a Stated Meeting of the Academy, February 2, 1933.

From the Out-Patient Department and Laboratories, Mount Sinai Hospital, New York.

become immune. Skin tests with tobacco antigen, which has been used for *the past ten years* testing asthmatics by I. C. Walker, Rich, Brown, myself and others showed this patient to be sensitive.

As a result of these observations it occurred to me to investigate other clinical states in which tobacco might play a role. Thrombo-angiitis obliterans, migrating phlebitis, coronary artery disease and tobacco anginas, known to clinicians for many years as occurring in smokers were obviously most suitable for such investigation.

The problems for solution were as follows: first, what role did tobacco and tobacco smoke play in these pathological conditions; secondly, if tobacco was the incriminating agent why did it affect some and not other smokers; third, did tobacco act as a toxin or in the nature of a sensitizing agent similar to pollen, in hayfever. In other words were the patients suffering from thrombo-angiitis, migrating phlebitis, certain forms of angina pectoris in the category of allergic individuals.

Typical cases of thrombo-angiitis observed for a number of years in the thrombo-angiitis clinic as well as migrating phlebitis were selected for this investigation. The cases of coronary artery disease were from the services of Drs. Baehr and Oppenheimer at the Mount Sinai Hospital.

My first observations published in the Proceedings of the Society for Experimental Biology and Medicine in October, 1932, which have been recently confirmed by Sulzberger, dealt with results obtained in 68 cases of thrombo-angiitis and 122 controls. The presentation this evening is based on a study of 87 cases of thrombo-angiitis obliterans, 5 cases of migrating phlebitis, 35 cases of angina pectoris and coronary artery disease and 281 controls. The controls included 226 males and 55 females. All the male controls were smokers addicted to the use of tobacco. They consisted of 42 college students, between the ages of 16 to 21; 88 adults mostly Russian Jews between the ages of 26 to 68, suffering from all sorts of ailments, such as hyper-

tension, nephrolithiasis, carcinoma of stomach, bronchiectasis, pulmonary neoplasm, etc.; 26 cases of circulatory disturbances of the extremities atherosclerotic in nature; 5 of infectious asthma, 60 cases of ulcer of stomach and duodenum and 15 cases of hayfever. The 226 male controls were comparable in race, the duration and amount of tobacco used with the thrombo-angiitis patients. The 55 female controls were practically non-smokers, 18 of these had hypertension and diabetes and 28 miscellaneous diseases.

The tobacco employed in our investigations consisted of the uncured leaf of Burley, Maryland, Virginia and Xanthis (Turkish). Separate extracts of these were made according to the method of Coca. In addition we used a tobacco extract representing a mixture of various tobaccos which we obtained from the Allergy Department of the New York Hospital through the courtesy of Dr. Cooke. This extract was labelled "Coca" and gave us the largest number of positive reactions. It was prepared according to Dr. Coca in such a manner as to make it as nicotine free as possible.

Every case of thrombo-angiitis obliterans and every control was tested with the five different tobaccos. All the extracts were diluted 1 to 10, because the original solution was irritating and produced false positives. In addition to the tobacco, 12 cases have been tested with a solution of tobacco smoke prepared by Dr. Harry Sobotka, and 12 with nicotine. Every patient and every control was also tested with .01 ragweed and Coca's extracting fluid. The ragweed was important because in this way we picked up latent hayfever patients and obtained a clue as to a family history of allergy. The technique was the one employed in the testing of hayfever or asthma patients. The outer arm was injected intracutaneously with approximately 0.01 c.c. of the tobacco extract and reactions read within 15 to 20 minutes. The results were as follows:

1. 76 out of 87 cases of thrombo-angiitis obliterans between the ages of 22 and 58 were found to be hypersensitive to various tobacco extracts, an incidence of 87 per cent.

2. Out of 262 male cigarette smokers used as controls, 43 were positive, an incidence of 16 per cent. If out of this number the coronary artery and ulcer groups are omitted there are left 166 individuals with no known allergic stigmata, amongst whom 14 react, an incidence of 9 per cent. The reactions in these were at most two plus.

3. Out of 26 patients with circulatory disturbances of the extremities on an atherosclerotic basis, one reacted to tobacco; 25 were negative. This one also had coronary artery disease.

4. Of 43 women, non-smokers, only three reacted. These were constitutionally allergic. Of six women smokers, three reacted, but they all had allergic stigmata. This group is too small to be of significance.

5. In addition to the skin tests, the presence of reagins to tobacco was demonstrated in the sera in 15 out of 22 patients with thrombo-angiitis obliterans by means of the passive transfer method of Prausnitz and Kustner. This consists of withdrawing ten c.c. of blood from the arm vein of a patient with thrombo-angiitis, clotting it and injecting 0.15 c.c. of serum intradermally into various sites of the forearm of normal individuals who did not react to tobacco on preliminary testing. Three days later these sites are reinjected with the tobacco to which the patient had originally reacted. In the presence of antibodies, an urticarial wheal will appear in the sensitized skin area of the normal individual, similar to that obtained in the thrombo-angiitis patient. The occurrence of reagins to tobacco in our thrombo-angiitis cases indicates that we are dealing with individuals who are in all probability allergic, and that the positive phenomena are true antigen-antibody reactions.

6. Four out of ten cases of thrombo-angiitis reacted by skin tests to tobacco smoke. These reactions, however, need further investigation and corroboration.

7. Skin tests with a 10 per cent solution of nicotine tartrate diluted to 1:10000 and 1:5000 were negative. These

findings, nevertheless, do not as yet rule out nicotine as possibly playing an accessory role, for it is well known that sensitiveness to certain drugs and chemicals may exist in spite of negative skin reactions, etc.

8. Multiple sensitization to other proteins characteristically prevalent in allergic individuals was also found in 27 of the thrombo-angiitis patients in the form of various skin reactions to foods and inhalants. Further investigation of the concurrent responsibility of these foods, etc., in thrombo-angiitis will have to be made.

9. Of five cases of migrating phlebitis in whom infections such as rheumatic fever, tuberculosis and syphilis were ruled out, two reacted to tobacco, one was completely negative and four showed multiple sensitizations to various foods and inhalants.

10. Out of 60 cases of gastro-duodenal ulcer 16 or 26 per cent were sensitive to tobacco; 11 of these had either a personal or family history of allergy.

11. Study of 36 cases of coronary artery disease all of whom were smokers with the syndrome of angina pectoris indicated that 13 (36 per cent) were tobacco sensitive. The average age of the patients who reacted to tobacco was 45. This is comparable to the age group suffering from thrombo-angiitis. In four out of six of these cases reagins—antibodies—for tobacco were demonstrated in the serum by passive transfer. The average age of the coronary patients who failed to react to tobacco was 60.

CONCLUSIONS

1. These observations suggest that tobacco sensitiveness may play an important role in thrombo-angiitis obliterans. These patients may be said to belong to the category of allergic individuals.

2. 36 per cent of the patients with coronary artery disease with a syndrome of angina pectoris were found to be sensitive to tobacco, the incidence being especially conspicuous in those who develop the disease at an early age.

DISCUSSION

STATED MEETING—FEBRUARY 2, 1933

HARLOW BROOKS

I came here tonight somewhat frightened at what might be said against my kindly friend, tobacco. It is true that these studies, which we all admire very much I am sure, do show to a very striking degree sensitivity to a skin test in a group of vascular diseases in which clinicians have long expected that tobacco might be injurious. It seems that the tobacco may play some such deleterious role in these vascular states. However, I can see nothing which has been produced tonight which shows any definite proof insofar as etiology is concerned. It appears to me that this is really the crux of the situation. Furthermore, arrayed against this evidence shown tonight and which I confess I am partial to accept, is the enormous amount of negative experimental work which has been done by investigators, some of whom have been almost religiously fanatic in an attempt to show that tobacco does do these evil things.

Many of you are old enough to remember, for example, the work that Dr. I. Adler did in this line of research, producing finally no evidence whatsoever that tobacco produced serious tissue changes. At that time I was associated with Dr. Adler in some negative experimental work and I have since kept rather familiar with the experimental data along this line. It has never been shown without more than reasonable doubt that tobacco produces any lesions, to say nothing of such as are basically concerned in the diseases under discussion tonight.

Again it strikes me as peculiar that these allergic conditions should produce such striking changes as we find in thrombo-angiitis obliterans when the reaction is so negative in productive pathology in all other allergic states. I am still very glad to think, however, that thrombo-angiitis obliterans is a very rare disease and that there are a great many of us who enjoy tobacco and shall continue to do so.

I think all clinicians have questioned if tobacco might not play a role in angina pectoris, coronary thrombosis and so on, but of course those of us who have studied these conditions, especially the early cases, cannot credit such a supposition as a fact. I remember one of Heberden's first cases was a child of nine who had presumably not been a heavy tobacco user for a very long time and yet he had the typical pathology of this condition. Coronary disease seems quite as frequent in persons of unimpeachable habits as in those of us who sin occasionally—and with joy.

Clinically, it is certainly inadvisable for sufferers from coronary disease to continue the use of tobacco except in those not unusual cases which receive tremendous relief from the paroxysms by smoking.

All of us have seen cases of tobacco users who became strongly sensitized to tobacco. I remember reporting a case many years ago in which a man who had smoked from his early youth to fifty and then became acutely sensitized to tobacco, so much that he was unable to use public vehicles, go into public gatherings or even sit beside a friend who smoked including his wife, without getting an attack of cardiac palpitation. He has returned to the use of tobacco though and now at seventy has no more of these attacks, to his great joy.

All of us know we become sensitized to tobacco at certain times and to certain tobacco. We pipe smokers will smoke any kind of tobacco which is offered us, but the cigarette smoker is more apt to demand his own brand. I have often wondered why I can't smoke a cigarette without getting palpitation, when I can smoke any kind of tobacco, plug, awful or otherwise, if in a pipe.

There are so many strange factors which we clinicians have observed about tobacco that we must be cautious about jumping at the newest theory and going too far. All of the speakers have emphasized that they make no claims which are not fully established by the observations they have made. The layman outside and you and I inside the

profession who like to try new things are perhaps likely to get the idea that something new has really been proven against friend tobacco. We are willing to accept it when it has been proven, but not yet. Anthropologists estimate that tobacco has been used in this country for about 14,000 years, and I truly hope that we may continue to use it for about 14,000 years more.

DISCUSSION

STATED MEETING—FEBRUARY 2, 1933

ROBERT H. HALSEY

In a discussion of this kind, one hesitates because he feels that perhaps he may create the impression that he intends unnecessarily to take some of the joy out of life.

So far we have listened to reports of cases where the etiology is ascribed to tobacco but the etiology is not proven. There is a suspicion of tobacco because pain, a symptom, is aggravated in some who use tobacco. So far, I agree with Dr. Brooks who has well said, that etiologically there is no proof of any effect on the angina, if we refer to the arterial condition in the heart and not to the complaint, pain, which is merely a symptom. If we are including in the term the arterio-sclerotic changes in the coronary artery that is the result of disease, but if we refer by the term to the pain produced in the chest by the use of tobacco, it is a very different problem. We know that smoking tobacco does increase the severity or degree of pain in some and that is the reason why most physicians suggest discontinuing the use of tobacco.

It has been suggested two or three times that tobaccos differ in their nicotine content; thus, Cuban tobacco is said to contain 1 per cent to 3 per cent of nicotine, but French or Virginia may have as high as 6 per cent or 7 per cent. Turkish tobacco has only 2.5 per cent of nicotine and is said to be free from furfurol. But nicotine is not the only dele-

terious element contained in tobacco. It is the popular belief that the whole effect of tobacco is contained in nicotine, hence we hear and see the widely advertised denicotinized tobacco. The Connecticut Agricultural Experiment Station has told us that the much advertised and best processed denicotinized cigarettes are but little altered in their nicotine content. It also states that there are common untreated brands of tobacco in which the nicotine is even less than in the processed brands.

Tobacco smoke contains a good many things beside nicotine, such as pyridine to which the "smoker's throat" is due, carbon monoxide, furfurol (to which the headache is ascribed), irritant aldehyde, ammonia, hydrocyanic acid, volatile oil, phenols, quinoline, picoline, lutidine, collidine and perhaps some other substances in small amounts. What the full effect of these various substances is on the smoker, we do not know. Some work has been done to show the amount of carbon monoxide in the smoke may be sufficient actually to change the oxygen carrying power of the hemoglobin. In other words, we can get from the carbon monoxide of tobacco smoke some of the effects on the oxygen content of the blood that we theoretically think produces the pain in the so-called anginas. Some have shown that when anemia is present in the patient with angina, the pain may be more easily produced; for, the improvement of the anemia permits the patient to do things without the production of pain. Since the pain of angina may be increased by smoking tobacco it is possible that it is due to the relation of carbon monoxide and the oxygen carrying power of the blood. According to Barcroft there are three ways in which an anoxemia is produced: (1) not enough oxygen in the air, as at high altitudes; (2) not enough oxygen carried, as in anemia; (3) motion of blood too slow, as in congestion. Sir Thomas Lewis suggests that the pain may be due to the accumulation in the intercellular spaces of the products of physiologic contraction of the heart muscle and it is the washing out of these products by increased flow of blood that relieves the pain.

It has been stated here tonight that the development of intermittent claudication relieves the pain in the chest. This may be due to the greater relative limitation of effort by the claudication as contrasted with the coronary disease. The relief of the pain due to impaired coronary circulation under these conditions is probably due to the limitation of muscular or physical effort. The claudication restricts them to less muscular effort and this is within the limitation of the effort which the heart can sustain. It is not necessary to assume that there are changes in the blood vessels.

We have then three fundamental things to think about. What sure evidence have we of the effect of tobacco—there are changes in cardiac rate and rhythm—extra-systoles or premature contractions—Both these conditions clear up on the discontinuance of tobacco. Precordial or cardiac pain behaves the same way. These are symptoms due to physiologic reactions. But it does not follow that because nerve reactions can be increased or decreased by tobacco that there is an etiologic relation between these constituents and the production of coronary artery changes or athero-sclerosis.

DISCUSSION

Stated Meeting—February 2, 1933

Lewis A. Conner

I think that we all must have been struck with the fact that the two papers dealing with the effects of tobacco in man presented tonight are of a very different type from the usual article upon that subject with which we have been familiar in the past; which for the most part was filled with generalities and impressions, which often showed a bias either for or against tobacco, and which offered little in the way of concrete evidence. These papers and this work, it seems to me, are very impressive. The work is so appealing that I find myself able only by a conscious

effort to resist the temptation to accept its implications as the solution of the problem of the etiology of thromboangiitis obliterans, and yet obviously we cannot quite do that. Doctor Harkavy would be the first to say that these findings are only suggestive and that much more needs to be done before we can accept his evidence as conclusive. But the evidence is certainly impressive and should be most encouraging to him in his effort to solve this problem.

In speculating upon the sort of vascular effect we might expect to see as the result of the long continued use of tobacco in sensitive individuals one would probably think first of increased vascular tone or a tendency to vascular spasm. In thromboangiitis obliterans, however, the process is an inflammatory one with early occlusive thrombosis, and vascular spasm seems to play no important rôle. It would seem unlikely that such a progressive inflammatory process should be the result of allergic manifestations, and yet we do know that, rarely, thrombophlebitis has occurred as an allergic phenomenon. Of course the criticism that must occur to all of us at once is that with perhaps nine or ten per cent of the whole population of smokers hypersensitive to tobacco, as I understand Doctor Harkavy's figures seem to indicate, it is very hard to understand why, with excessive tobacco smoking so common, thromboangiitis obliterans should be relatively so rare. It seems evident that at best hypersensitiveness to tobacco can be only one of a group of factors which must include at least those of race, age, and sex.

Nevertheless the results of these investigations are most interesting and striking, and should open up a large field of further study.

FEE-SPLITTING. REPORT OF THE COMMITTEE ON PROFESSIONAL STANDARDS

APPROVED BY THE COUNCIL MARCH 22, 1933

During the winter of 1932 a Committee of the Medical Society of the County of New York discussed the subject of fee-splitting at great length. There was also some action taken by the House of Delegates at the annual meeting of the Medical Society of the State of New York.

As the result of these two actions, several Fellows of the Academy urged The Committee on Professional Standards to state the question anew. The Committee therefore reports to the Council as follows:

The American Medical Association in its principles of medical ethics, forbids the division of fees and the giving of rebates.

The Medical Society of the State of New York adopted independently a series of statements known as the Principles of Professional Conduct of the Medical Society of the State of New York. The principles adopted in 1905 in regard to fee-splitting are embodied in Section 32 and read as follows:

"Physicians shall not give, offer or promise to any person who may have recommended, referred or procured for them patients for medical or surgical treatment, any gift, gratuity, commission or bonus, nor shall any physician request, solicit, accept or receive any such gift, gratuity, commission or bonus."

This was amended in 1931 to read as follows:

"Physicians shall not give, nor offer, nor shall they undertake or promise to give, either directly or indirectly, any gift, gratuity, commission or bonus in consideration of or in return for the referring, recommending or procuring of any patient for medical, surgical or other treatment or in consideration of or in return for the referring, recommending or procuring of any person, specimen or material for diagnostic or other study or work, nor shall any physician request, solicit, accept or receive any such gift, gratuity, commission or bonus."

When the practice of fee-splitting appeared to be growing more extensive, The New York Academy of Medicine took action on May 25, 1911, and resolutions were adopted by the Academy and mailed to every Fellow of the Academy. The resolutions read as follows:

RESOLVED that the secret division of a fee, or fees, with any person or persons, who may be instrumental in influencing a patient, or patients, to apply for operative care or professional advice, is unworthy of any member of the medical profession.

RESOLVED that if such a division of fee is made by a member of The New York Academy of Medicine it should be counted as a sufficient ground for the expulsion of the member.

RESOLVED that the Council considers it its duty to investigate charges against members made on the basis of such division of fee, and on receipt of proof of offense the Council may either permit the resignation of the person or expel him from the Academy.

Similar action was taken in December, 1930, which reads as follows:

RESOLVED that The New York Academy of Medicine endorses the principles embodied in the Principles of Professional Conduct of the Medical Society of the State of New York in regard to the division of fees and be it further

RESOLVED that The New York Academy of Medicine reaffirm its action taken in 1911.

Every endeavor has been made in the last few years to make it known to physicians that the secret division of fees is not only unethical but in many instances flagrantly dishonest, by the above resolutions and by the above further action taken by the Academy in 1930. And in 1930 the Committee on Admissions of the Academy was instructed by the Academy to see that the following statement be

printed upon the application form and signed by the candidate:

RESOLVED that the secret division of a fee, or fees, with any person or persons, who may be instrumental in influencing a patient or patients, to apply for operative care or professional advice is unworthy of any member of the medical profession.

RESOLVED that if such a division of fee is made by a member of The New York Academy of Medicine, it should be counted as a sufficient ground for the expulsion of the member.

RESOLVED that the Council may either reprimand the person or permit his resignation or recommend him to the Academy for expulsion.

The Committee on Professional Standards on February 23, 1933, recommended to the Council of The New York Academy of Medicine:

1. That the Council condemn again the practice of the secret division of fees.
2. That the Council suggest to consulting specialists and surgeons that they render all assistance possible in educating the public by explaining to patients and their families the need and value of the family physician's services.
3. That this report be published in the Bulletin of the Academy.

RECENT ACCESSIONS TO THE LIBRARY

MARCH

Basset, A. Le genou; anatomie chirurgicale et radiographique, chirurgie opératoire.
Paris, Masson, 1932, 187 p.

Bowles, G. T. New types of old Americans at Harvard.
Cambridge, Mass., Harvard Univ. Press, 1932, 144 p.

Bridges, J. W. Personality, many in one.
Boston, Stratford, [1932], 215 p.

Brooks, H. Functional disturbances of the heart.
Phil., Lippincott, [1932], 288 p.

Broom, R. The mammal-like reptiles of South Africa, and the origin of mammals.
London, Witherby, [1932], 376 p.

Bryan, C. P. Roundabout Harley Street.
London, Bale, 1932, 260 p.

von Buddenbrock, W. Die Welt der Sinne.
Berlin, Springer, 1932, 181 p.

de Castro, A. Chirurgia della tubercolosi polmonare.
Milano, Hoepli, 1933, 230 p.

Chabrol, E. Les ictères.
Paris, Masson, 1932, 523 p.

Chopra, R. N. Indigenous drugs of India.
Calcutta, Art Press, 1933, 655 p.

Christie, (Mrs.) I. (Inglis). Duguld Christie of Manchuria, pioneer and medical missionary.
London, Clarke, [1932], 231 p.

Crowden, G. P. Muscular work, fatigue and recovery.
London, Pitman, 1932, 74 p.

Dattner, B. Moderne Therapie der Neurosyphilis.
Wien, Maudrich, 1933, 334 p.

DeLee, J. B. The principles and practice of obstetrics. 6. ed.
Phil., Saunders, 1933, 1165 p.

Diseases of the nose, throat and ear. Edited by A. L. Turner. 3. ed.
Bristol, Wright, 1932, 465 p.

Dimitresco-Popovici, J. Les fonctions gastro-duodénales.
Paris, Masson, 1932, 250 p.

Drăgănescu, S. & Grigorescu, D. Lichidul cefalo-rahidian.
Bucuresti, Tiparnita, 1932, 288 p.

Eitner, E. Kosmetische Operationen.
Wien, Springer, 1932, 131 p.

Fischer, G. Die örtliche Betäubung in der Zahnheilkunde, 8. Aufl.
Berlin, Meusser, 1933, 240 p.

Fitzgibbon, E. Malaria, the governing factor.
London, Daniel, [1932], 100 p.

Flesch-Thebesius, M. Chirurgische Tuberkulose.
Dresden, Steinkopff, 1933, 194 p.

Fraenkel, L. & Fels, E. Photographischer Atlas der geburtshilflich-gynäkologischen mikroskopischen Diagnostik.
Berlin, Karger, 1933, 28 p. 132 ill.

Frazer, J. E. S. A manual of embryology.
N. Y., Wood, 1932, 486 p.

Freeman, W. Neuropathology, the anatomical foundation of nervous diseases.
Phil., Saunders, 1933, 349 p.

Gillett, H. W. & Irving, A. J. Gold inlays by the indirect system.
Brooklyn, Dental Items of Interest Pub. Co., 1932, 584 p.

Goldberg, B. Procedures in tuberculosis control for the dispensary, home and sanatorium.
Phil., Davis, 1933, 373 p.

Graham, S. G. & Morris, N. Acidosis and alkalosis.
Edin., Livingstone, 1933, 203 p.

Grollman, A. The cardiac output of man in health and disease.
London, Baillière, [1932], 325 p.

Harding, L. A. & Willard, A. C. Heating, ventilating and air conditioning. 2. ed.
N. Y., Wiley, 1932, 963 p.

Henning, M. W. Animal diseases in South Africa.
[Johannesburg], Central News Agency, 1932, 2 v.

Hobhouse, E. W. N. Nervous disorder in infancy and childhood.
London, Lewis, 1932, 212 p.

Hunt, H. C. A retired habitation; a history of the Retreat, York (mental hospital).
London, Lewis, 1932, 143 p.

von Jaschke, R. T. & Pankow, O. Lehrbuch der Gynäkologie. 5. Aufl.
Berlin, Springer, 1933, 759 p.

Joachimovits, R. Gonorrhoe der weiblichen Genitalorgane.
Wien, Maudrich, 1933, 231 p.

Kaiser, A. D. Children's tonsils in or out.
Phil., Lippincott, [1932], 307 p.

Kallett, A. & Schlink, F. J. One hundred million guinea pigs.
N. Y., Vanguard Press, 1932, 312 p.

Kellogg, E. L. The duodenum; its structure and function, its diseases and their medical and surgical treatment.
N. Y., Hoeber, 1933, 855 p.

Kuczynski, R. R. Fertility and reproduction; methods of measuring the balance of births and deaths.
N. Y., Falcon Press, 1932, 94 p.

Lane, C. A. Hookworm infection.
London, Milford, 1932, 319 p.

Lipscomb, F. M. Diseases of old age.
London, Baillière, 1932, 472 p.

Loos, A. Zahnärztliche Prothetik vom Standpunkt einer biologisch orientierten Indikation.
Berlin, Meusser, 1933, 300 p.

McDougall, W. The energies of men; a study of the fundamentals of dynamic psychology.
London, Methuen, [1932], 395 p.

Meisen, V. Varicose veins and haemorrhoids, and their treatment.
Copenhagen, Levin, 1932, 149 p.

Meyer, O. Ailments of the leg.
N. Y., Elliot, 1932, 128 p.

Morris' human anatomy. Edited by C. M. Jackson. 9. ed.
Phil., Blakiston, [1933], 1481 p.

Pringsheim, E. G. Julius Sachs, der Begründer der neueren Pflanzenphysiologie.
Jena, Fischer, 1932, 302 p.

Reschke, K. Chirurgische Indikationen.
Berlin, Vogel, 1932, pt. 1.

Roxburgh, A. C. Common skin diseases.
London, Lewis, 1932, 322 p.

Simon, P. W. System einer biologisch-mechanischen Therapie der Gebiss-Anomalien.
Berlin, Meusser, 1933, 287 p.

Simons, A. M. & Sinai, N. The way of health insurance.
Chic., Univ. of Chic. Press, [1932], 215 p.

Smith, D. T. Oral spirochetes and related organisms in fuso-spirochetal disease.
Balt., Williams, 1932, 243 p.

Smith, E. C. An atlas of skin diseases in the tropics.
London, Bale, 1932, 60 p. 52 pl.

Smith, G. F. Hints to the young practitioner.
London, Milford, 1932, 150 p.

Stuart-Low, W. The care of the nose, throat and ear. 3. ed.
London, Baillière, 1933, 102 p.

Textbook of medicine by various authors. Edited by J. J. Conybeare. 2. ed.
N. Y., Wood, 1932, 1004 p.

Thompson, C. J. S. The hand of destiny; the folk-lore and superstitions of everyday life.
London, Rider, [1932], 303 p.

Villiger, E. Die periphere Innervation. 6. ed.
Leipzig, Engelmann, 1933, 164 p.

Widal, F. Oeuvre scientifique.
Paris, Masson, 1932, 752 p.

Zunz, E. Éléments de pharmacodynamie spéciale.
Paris, Masson, 1932. 2 v.

APRIL

Adrian, E. D. The mechanism of nervous action.
Phil., Univ. of Penn. Press, 1932, 103 p.

American Medical Association. Medicolegal cases; abstracts of court decisions of medicolegal interest, 1926-1930.
Chic., A. M. A., 1932, 1336 p.

Balyeat, R. M.; Rusten, E. M. & Bowen, R. Wheat, egg or milk free diets.
Phil., Lippincott, [1933], 149 p.

Bastos Ansart, M. La osteosíntesis.
Bilbao, Espasa-Calpe, 1932, 114 p.

Bates, E. S. & Dittemore, J. V. Mary Baker Eddy; the truth and the tradition.
London, Routledge, 1933, 476 p.

Beatty, R. T. Hearing in man and animals.
London, Bell, 1932, 227 p.

Bickham, W. S. & Smyth, C. M., Jr. Operative surgery, v. 7.
Phil., Saunders, [1933], 849 p.

Blacker, C. P. Human values in psychological medicine.
London, Milford, 1933, 179 p.

Blanc, H. L'épreuve de la phénol-sulfone-phtaléine (P.S.P.) en chirurgie urinaire.
Paris, Masson, 1932, 186 p.

Boring, E. G. The physical dimensions of consciousness.
N. Y., Century, [1933], 251 p.

Burridge, W. A new physiology of sensation based on a study of cardiac action.
London, Milford, 1932, 70 p.

Cameron, A. T. & Gilmour, C. R. The biochemistry of medicine.
London, Churchill, 1933, 506 p.

Cantarow, A. Calcium metabolism and calcium therapy. 2. ed.
Phil., Lea, 1933, 252 p.

Casper, L. Lehrbuch der Urologie. 5. Aufl.
Berlin, Urban, 1932, 486 p.

Chevallier, P. & Bernard, J. Les adénopathies inguinales.
Paris, Alcan, 1932, 271 p.

Clark, G. L. Applied x-rays. 2. ed.
N. Y., McGraw-Hill, 1932, 470 p.

Crew, F. A. E. Sex determination.
London, Methuen, [1933], 138 p.

Cushing, H. W. Papers relating to the pituitary body, hypothalamus and parasympathetic nervous system.
Springfield, Ill., Thomas, 1932, 234 p.

Delagénière, H. Cinquante techniques chirurgicales.
Paris, Masson, 1933, 315 p.

Diehl, K. & von Verschuer, O. (Freiherr). Zwillingstuberkulose; Zwillingsforschung und erbliche Tuberkulosedisposition.
Jena, Fischer, 1933, 500 p.

Ellenberger, W. & Baum, H. Handbuch der vergleichenden Anatomie der Haustiere. 17. Aufl.
Berlin, Springer, 1932, 1102 p.

Favill, J. Outline of the cranial nerves.
Chic., Univ. of Chic. Press, [1933], 112 p.

Feinberg, S. M. Asthma, hay fever and related disorders.
Phil., Lea, 1933, 124 p.

Fibiger, J. Forelaesninger over patologisk anatomi.
Kjøbenhavn, Busck, 1932, 2 v.

Fichera, G. I fattori interni nello sviluppo dei tumori.
Milano, Hoepli, 1933, 213 p.

Froment, R. Les tachycardies paroxystiques ventriculaires.
Paris, Masson, 1932, 541 p.

Gabriel, W. B. The principles and practice of rectal surgery.
London, Lewis, 1932, 248 p.

Gray, H. Anatomy, descriptive and applied. 25. ed.
London, Longmans, 1932, 1478 p.

Grundriss der sozialen Medizin . . . hrsg. von F. Ickert und J. Weicksel.
Leipzig, Barth, 1932, 384 p.

Harris, D. T. The technique of ultra-violet radiology.
London, Blackie, 1932, 166 p.

Heilmeyer, L. Medizinische Spektrophotometrie.
Jena, Fischer, 1933, 274 p.

Hill, A. V. Chemical wave transmission in nerve.
N. Y., Macmillan, 1932, 74 p.

Holman, C. T. The cure of souls, a socio-psychological approach.
Chic., Univ. of Chic. Press, [1932], 331 p.

Huant, E. Système neuro-végétatif et radiations ultra-violettes.
Paris, Maloine, 1932, 113 p.

Iselin, M. Chirurgie de la main.
Paris, Masson, 1933, 339 p.

Janet, P. M. F. L'amour et la haine.
Paris, Maloine, 1932, 305 p.

Jausion, H. & Pagès, F. Les maladies de lumière et leur traitement.
Paris, Masson, 1933, 203 p.

Jonesco-Sisesti, N. La syringobulbie.
Paris, Masson, 1932, 391 p.

Jordan, H. E. & Kindred, J. E. A text-book of embryology.
N. Y., Appleton, 1932, 613 p.

Judine, S. La transfusion du sang de cadavre à l'homme.
Paris, Masson, 1933, 144 p.

Kissmeyer, A. La maladie de Boeck.
Paris, Masson, 1932, 147 p.

Krusen, F. H. Light therapy.
N. Y., Hoeber, 1933, 186 p.

Lambert, G. O. Cardiovascular pain as a biochemical problem.
London, Lewis, 1933, 75 p.

LaMotte, F. L.; Kenny, W. R. & Reed, A. B. pH and its practical application.
Balt., Williams, 1932, 262 p.

Lapière, S. Le mycosis fongoïde.
Paris, Masson, 1932, 122 p.

Le Bourdellès, B. & Jalet, J. La tuberculose du lobe azygos.
Paris, Doin, 1933, 158 p.

Lewis, (Sir) T. Diseases of the heart.
London, Macmillan, 1933, 297 p.

Lucien, M. & Vermelin, H. L'oeuf humain et ses annexes.
Paris, Doin, 1933, 157 p.

McCleary, G. F. The early history of the infant welfare movement.
London, Lewis, 1933, 176 p.

McGregor, A. L. A synopsis of surgical anatomy.
N. Y., Wood, 1932, 609 p.

MacKenna, R. W. Diseases of the skin. 3. ed.
Balt., Wood, 1933, 506 p.

Magnus-Alsleben, E. Vorlesungen über innere Medizin. 5. Aufl.
Berlin, Springer, 1932, 485 p.

Maingot, R. H. The management of abdominal operations.
N. Y., Wood, 1932, 311 p.

Massey, A. Epidemiology in relation to air travel.
London, Lewis, 1933, 59 p.

Matheson, R. Medical entomology.
Springfield, Ill., Thomas, 1932, 489 p.

Mourgue, R. Neurobiologie de l'hallucination.
Bruxelles, Lamertin, 1932, 416 p.

Much, H. C. R. Hans Much, Arzt und Mensch. [2. Aufl.]
Dresden, Reissner, 1933, 267 p.

Nager, F. R. & Meyer, M. Die Erkrankungen des Knochensystems und ihre Erscheinungen an der Innenohrkapsel des Menschen.
Berlin, Karger, 1932, 231 p.

Ogilvie, W. H. Treatment of fractures in general practice.
London, Bale, 1932, 2 v.

Pardee, H. E. B. Clinical aspects of the electrocardiogram. 3. ed.
N. Y., Hoeber, 1933, 295 p.

Pepper, O. H. P. & Farley, D. L. Practical hematological diagnosis.
Phil., Saunders, 1933, 562 p.

Reckless, W. C. Vice in Chicago.
Chic., Univ. of Chic. Press, [1933], 314 p.

Roger, H. Les troubles du sommeil.
Paris, Masson, 1932, 206 p.

Romanis, W. H. C. & Mitchiner, P. H. The science and practice of surgery. 4. ed.
Phil., Lea, 1933, 2 v.

Rothrock, J. L. Ten years of obstetrics and gynecology in private practice.
N. Y., Hoeber, 1933, 209 p.

Rousseau-Decelle, L. & Raison, J. Pathologie buccale, péri-buccale et d'origine buccale.
Paris, Masson, 1933, 576 p.

Sergent, E. E. J. Les réveils de la tuberculose pulmonaire chez l'adulte.
Paris, Masson, 1933, 225 p.

Sex and internal secretions; a survey of recent research, edited by Edgar Allen.
Balt., Williams, 1932, 951 p.

Smith, J. L. Growth.
Edin., Oliver, 1932, 135 p.
Troisier, J. & Boquien, Y. La spirochétose méningée.
Paris, Masson, 1933, 187 p.
White, W. A. Crimes and criminals.
N. Y., Farrar, [1933], 276 p.
Würdemann, H. V. Injuries of the eye. 2. ed.
London, Kimpton, 1932, 900 p.

PROCEEDINGS OF ACADEMY MEETINGS

MARCH AND APRIL, 1933

MARCH

STATED MEETINGS

Thursday Evening, March 2, at 8:30 o'clock

I. EXECUTIVE SESSION
   a. Reading of the Minutes
   b. Election of Fellows and Honorary Fellows
   c. Special Election—Committee on Library, Committee on Fellowship
II. PAPERS OF THE EVENING
   a. The welfare resources of the city for the physician, Mr. Charles C. Burlingham, President, Welfare Council
   b. Venereal disease control, Thomas Parran, Jr., State Commissioner of Health

Discussion, Edward L. Keyes, A. Benson Cannon, David J. Kaliski

Thursday Evening, March 16, at 8:30 o'clock

THE SIXTH HARVEY LECTURE

"Contributions of Chemistry to the Knowledge of Immune Processes", Michael Heidelberger, Associate Professor of Biological Chemistry, Columbia University.

This lecture took the place of the second Stated Meeting of the Academy for March.

SECTION MEETINGS

SECTION OF SURGERY

Friday Evening, March 3, at 8:30 o'clock

I. READING OF THE MINUTES
II. PRESENTATION OF CASES
   a. Hemolytic streptococcus sepsis with multiple metastases. 3 year follow-up

b. Thrombo-angiitis-obliterans. Complications and treatment. 1½ year follow-up

c. Incision and drainage of subphrenic abscess following perforation of duodenal ulcer. Medical treatment of ulcer. 6 year follow-up, Beverley C. Smith

III. Papers of the Evening

a. The late physiological and clinical results of subtotal gastrectomy for gastric and duodenal ulcers, A. A. Berg

Discussion

b. The peritoneal cavity—a misnomer, Kingsley Roberts

Discussion, Frederic W. Bancroft, Charles Gordon Heyd

IV. General Discussion

V. Executive Session

Appointment of Nominating Committee

Section of Dermatology and Syphilology

Tuesday Evening, March 7, at 8:00 o'clock

The exhibition of patients was open to all physicians between the hours of 7:30 and 8:15 p m. After 8:15, only members were permitted to remain in the demonstration rooms.

I. Reading of the Minutes

II. Presentation of Patients

a. Patients from the Mount Sinai Clinic

b. Miscellaneous patients

III. General Discussion

IV. Executive Session

Appointment of Nominating Committee

Joint Meeting

Section of Neurology and Psychiatry

and

New York Neurological Society

Program arranged by the New York Neurological Society

Tuesday Evening, March 7, at 8:30 o'clock

I. Reading of the Minutes

II. Papers of the Evening

a. Optic pseudoneuritis and pseudopapilledema, Robert K. Lambert, H. Weiss

Discussion, John N. Evans, Thomas H. Johnson

b. Description of chronaxic apparatus, M. Walthard, Zurich, Switzerland

c. Treatment of juvenile general paralysis, Howard W. Potter

d. Treatment of general paresis with a combination of fever and tryparsamide, Harry C. Solomon, Boston (by invitation)

Discussion, Leon H. Cornwall, Henry A. Bunker, Jr. (by invitation)

III. Executive Session

Section of Neurology and Psychiatry

Appointment of Nominating Committee

SECTION OF HISTORICAL AND CULTURAL MEDICINE

Wednesday Evening, March 8, at 8:30 o'clock

I. READING OF THE MINUTES

II. PAPERS OF THE EVENING

a. Joseph Jacob Plenk, teacher and classifier of skin diseases, J. E. Lane, New Haven

b. Bernardino Ramazzini, founder of industrial hygiene (1633-1714), Herman Goodman

III. GENERAL DISCUSSION

IV. EXECUTIVE SESSION

Report of Nominating Committee

SECTION OF PEDIATRICS

Thursday Evening, March 9, at 8:30 o'clock

I. EXECUTIVE SESSION

Appointment of Nominating Committee

II. PAPERS OF THE EVENING

a. Studies in influenza, Perrin Long, Johns Hopkins University (by invitation)

b. Studies on the etiology and pathogenesis of whooping cough, Arnold R. Rich, Johns Hopkins University (by invitation)

III. DISCUSSION, Alphonse R. Dochez, Yale Kneeland (by invitation)

SECTION OF OTOLARYNGOLOGY

Wednesday Evening, March 15, at 8:30 o'clock

(From the Otolaryngological Department—Kings County Hospital)

I. INSTRUMENTS, ETC.

Improved irrigating bottles for antrum lavage, Mervin C. Myerson

II. CASE REPORTS

a. Oral and pharyngeal manifestations of pellagra, Oscar Rodin (by invitation)

b. Pemphigus beginning in the larynx, Hyman Danish (by invitation)

c. Cavernous sinus thrombosis of otitic origin, Joseph G. Gilbert (by invitation)

d. Carbuncle of nose, ophthalmic vein phlebitis, operation for prevention of cavernous sinus thrombosis—recovery, E. Jefferson Browder (by invitation)

e. Bullet wound—external auditory canal, Sphenomaxillary fossa hemorrhage, Tracheotomy—ligation of common carotid artery—recovery, Herman Rubin (by invitation)

f. Peritonsillar abscess—retropharyngeal abscess—osteomyelitis of base of skull—meningitis, etc., Jos. S. Silverberg (by invitation)

g. Peritonsillar abscess and Ludwig's angina, Wilson J. Troup (by invitation)

III. PAPER OF THE EVENING

Nutritional and biochemical phases of otolaryngology, Mervin C. Myerson

Discussion—Henry M. Feinblatt (by invitation)

IV. Appointment of Nominating Committee

A clinical meeting was held at the Kings County Hospital, Brooklyn, at 2 p.m., on this date. The program was announced on a separate enclosure.

Section of Orthopedic Surgery
Friday Evening, March 17, at 8:30 o'clock

I. Reading of the Minutes
II. Presentation of Cases
  a. Diagnosis and treatment in two early cases of congenital dislocation of the hip, Charles H. Jaeger
  b. Congenital dislocation of the hip. Treatment, with special reference to postoperative exercises, Dexter D. Ashley
III. Papers of the Evening
  a. Spine studies in convalescent poliomyelitis, Harry Von Lackum (by invitation)
  b. The early treatment of equinus in congenital club foot, Arthur Krida, John C. McCauley, Jr. (by invitation)
IV. General Discussion
V. Executive Session
  Appointment of Nominating Committee

Section of Ophthalmology
Monday Evening, March 20, at 8:30 o'clock

I. Reading of the Minutes
II. Reports of Cases
  a. A case of angioid streaks of the retina with pseudoxanthoma elasticum, David A. Newman
  b. An unusual case of glassy network in the anterior chamber, Joseph Ziporkes
  c. A case of iridodialysis with hypertension; surgical reattachment, Ben Witt Key
  d. Calcified hyaline deposits (Drusen) on the optic disc, associated with pigment changes in the retina, Isadore Givner (by invitation)
  e. Symblepharon and obliterated cul-de-sac corrected by buccal mucous membrane graft, Daniel B. Kirby
  f. Report of 5 cases of glass in the eyeball. The Vogt method of localization, Harry A. Goalwin (by invitation)
  g. A case of iridodialysis repaired by suturing, Edward N. DeWitt (by invitation)
III. Papers of the Evening
  a. Necrotic sarcomas of the uvea. Lantern slide demonstration, Bernard Samuels
  b. When and how physicians began prescribing spectacle-glasses, Harry Friedenwald, Baltimore (by invitation)
IV. During the period 7 to 8:30 p.m. there was a demonstration of
  a. Cases with late results in injuries of the eyes
  b. The cases of Drs. Newman, Ziporkes, Kirby
  c. An exhibit of old ophthalmological books by B. Samuels, I. Goldstein,

Percy Fridenberg (by invitation), P. C. Jameson (by invitation), R. I. Lloyd, J. N. Evans, A. Knapp, Library of The New York Academy of Medicine

V. Executive Session
Appointment of Nominating Committee

Section of Medicine
Tuesday Evening, March 21, at 8:30 o'clock

I. Executive Session
a. Reading of the Minutes
b. Appointment of Nominating Committee

II. Papers of the Evening
a. The rôle of atelectasis in pulmonary tuberculosis, B. P. Stivelman
b. The advantages of the physiological diet in the treatment of diabetes, H. Rawle Geyelin
c. Clinical and experimental studies of amyloid disease with special reference to renal amyloidosis, S. Edward King

III. General Discussion
J. Burns Amberson, Jr., Pol N. Coryllos, Nellis B. Foster, William S. Ladd

Section of Obstetrics and Gynecology
Tuesday Evening, March 28, at 8:30 o'clock

I. Reading of the Minutes

II. Papers of the Evening
a. Birth injury of the occipital bone. Report of 32 cases, Frederick A. Hemsath (by invitation)
Discussion, Leon T. LeWald, George W. Kosmak
b. The Friedman pregnancy test. Report of 635 cases, Frank Spielman (by invitation), Morris A. Goldberger, Abraham C. Posner, Grete Stohr
c. More rational methods in the prevention and control of eclampsia, J. O. Arnold, Philadelphia (by invitation)
Discussion, George W. Kosmak, E. D. Friedman, Ernest E. Locke

III. General Discussion

IV. Executive Session
Appointment of Nominating Committee

AFFILIATED SOCIETIES

New York Meeting of the

Society for Experimental Biology and Medicine
Under the auspices of
The New York Academy of Medicine
Wednesday Evening, March 15, at 8:30 o'clock

I. Induced ovulation in amphibians by injection of antuitrin-s, A. E Ogilvie (Introduced by A. J. Goldforb)

II. Hypertrophy of adrenals in scurvy, A. J. Quick

III. Relation of x-rays to lymphomatosis, J. Furth, R. R. Rathbone, H. R. Seibold
IV. Effect of sodium chloride in treatment of Addison's disease, R F. Loeb
V. Biological action of strongly positive redox systems, E. H. Fishberg
VI. A secondary bio-electric effect of potassium, L. R. Blinks
VII. Temperature of circulating blood and other tissues with associated observations of capillary activity, I. S. Wright, H. J. Johnson (Introduced by H. O. Mosenthal)
VIII. Reticulocytes of normal albino rats, C. J. Stucky, E. Brand
IX. Dissociation of pneumococcus
A new colony variant of pneumococcus, M. H. Dawson (Introduced by A. R. Dochez)

NEW YORK ROENTGEN SOCIETY

In affiliation with The New York Academy of Medicine
Monday Evening, March 20, at 8:30 o'clock

I. 8:30 to 9:00 p.m. Demonstration and discussion of interesting cases
II. 9:00 p.m. Pyelographic studies of the renal tract, P. F. Butler, Boston (by invitation)

NEW YORK PATHOLOGICAL SOCIETY

In affiliation with The New York Academy of Medicine
Thursday Evening, March 23, at 8:30 o'clock

I. Demonstration of pathological specimens
II. The thymus in infectious diseases, Melvin C. Kimball (by invitation)
III. An unusual case of faulty blood grouping due to autoagglutination, Perry J. Manheims, Endre K. Brunner (by invitation)
IV. The so-called Brenner tumor of ovary (fibro-epithelioma mucinosum benignum), Alfred Plaut
V. Malignant nephrosclerosis and periarteritis nodosa, Sadao Otani
VI. Purulent thrombophlebitis of the pulmonary veins, W. Antopol, C. B. Rabin
VII. Pyelophlebitis complicating gangrenous lung abscess, C. B. Rabin, S. Moolten

APRIL

STATED MEETINGS

Thursday Evening, April 6, at 8:30 o'clock

I. EXECUTIVE SESSION
a. Reading of the Minutes
b. Resolutions on the death of George David Stewart
c. Election of Fellows
II. THE HERMANN MICHAEL BIGGS MEMORIAL LECTURE
Diabetes mellitus; problems of present day treatment, Herman O. Mosenthal
Discussion, Public Health Problems, Charles Bolduan; Heredity and prevention, Elliott P. Joslin, Boston; Clinical phases, Nellis B. Foster; Recent trends in diabetes mortality, Louis I. Dublin

Thursday Evening, April 27, at 8:30 o'clock

THE SEVENTH HARVEY LECTURE

"Recent Biochemical Studies of Liver Function", J. C. Drummond, Professor of Physiology and Biochemistry, University College, London.

This lecture took the place of the second Stated Meeting of the Academy for April.

SECTION MEETINGS

SECTION OF DERMATOLOGY AND SYPHILOLOGY

Tuesday Evening, April 4, at 8:00 o'clock

I. READING OF THE MINUTES

II. PRESENTATION OF PATIENTS

a. From the New York Hospital

b. From the Polyclinic Hospital

c. Miscellaneous Patients

III. GENERAL DISCUSSION

IV. EXECUTIVE SESSION

Nomination of Section Officers and one member of Advisory Committee

SECTION OF SURGERY

Friday Evening, April 7, at 8:30 o'clock

I. READING OF THE MINUTES

II. PRESENTATION OF CASES

a. 1. Carcinoma of the stomach, persistent bleeding after two transfusions; subtotal gastrectomy. Aged 63. Followed two years

2. Carcinoma of recto-sigmoid; Rankin resection; septic diarrhoea and prolonged hiccough. 41 years old. Followed eight months

3. Compound comminuted fracture of the humerus; muscular spiral paralysis; osteomyelitis; non-union ten months; tibial bone graft; followed twenty-two months; cured; Irwin E. Siris

b. 1. Duodenal obstruction apparently due to pressure by superior mesenteric artery

2. Successive intestinal obstruction caused by three different strangulated herniae

3. Intestinal obstruction four times in same patient from different causes, Walter T. Stenson

III. PAPER OF THE EVENING

Intrathoracic lipomas, George J. Heuer

IV. DISCUSSION

V. EXECUTIVE SESSION

Nomination of Section Officers and one member of Advisory Committee

SECTION OF NEUROLOGY AND PSYCHIATRY

Tuesday Evening, April 11, at 8:30 o'clock

I. READING OF THE MINUTES

II. CLINICAL PRESENTATIONS

a. Post-Graduate Hospital—Neurological Service

1. Tumor of the mid-brain with changes of personality, Abraham M. Rabiner (by invitation)

2. Hemihyperalgesia of thalamic origin, George A. Blakeslee
3. Narcolepsy; marked symptomatic improvement following treatment, James L. Joughlin

b. Bellevue Hospital—Neurological Service
1. Familial nuclear agenesis, Isadore Neistadt (by invitation), Harold Block (by invitation)
2. Recurrent ophthalmoplegia, E. D. Friedman
3. Cerebral meningioma simulating spinal cord tumor, Foster Kennedy

c. Mt. Sinai Hospital—Neurological Service
1. Luetic meningoencephalitis, simulating brain tumor, Herman Selinsky
2. Meningo-encephaloradiculitis, Morris Grossman

d. Neurological Institute
1. Paget's Disease, Leon A. Salmon (by invitation)
2. Clinical presentation of basophilic disease of the pituitary, Irving H. Pardee
3. Spinal anesthesia; nervous system sequelae. A case in point, George H. Hyslop

e. Montefiore Hospital—Neurological Service
1. Hypophyseal neoplasm with hypothermia, N. E. Selby
2. Cerebellar syndrome associated with chronic alcoholism, W. Needles (by invitation)

III. Discussion

IV. Executive Session

Nominations for Officers of Section and 2 members of Advisory Committee, one member for 3 years, to fill unexpired term of Michael Osnato, deceased, and one member for five years

Section of Pediatrics

Thursday Evening, April 13, at 8:30 o'clock

I. Executive Session

Nomination of Section Officers and one member of Advisory Committee

II. Papers of the Evening

The variability in weight of the thymus and its component parts in health and disease, Edith Boyd, University of Minnesota (by invitation)

III. Discussion, Henry Jaffe (by invitation), Aubrey B. MacLean, Max A. Goldzieher (by invitation), Rustin McIntosh, Murray H. Bass.

Section of Ophthalmology

Monday Evening, April 17, at 8:30 o'clock

I. Reading of the Minutes

II. Scientific Session

A case of retinitis pigmentosa without pigment, Olga Sitchevska

III. Papers of the Evening

a. Iris processes, Algernon B. Reese

b. Physiology and embryology of pigment (Melanin) formation, Samuel Peck

c. Pathology of the pigmentary lesions in the fundus, David Wexler
d. Pigmentation of the fundus, photographic demonstration, Arthur Bedell, Albany
e. The significance of blood cholesterol in the dietary management of diabetes with special reference to eye complications, Henry Geyelin

IV. Demonstration before the meeting
a. Slit-lamp cases
b. Methods of preparing macroscopic eye specimens, Mr. E. B. Burchell

V. Executive Session
Nomination of Section Officers and one member of Advisory Committee

At the May meeting there was an exhibit of old instruments, ophthalmoscopes, eye spectacles, etc.

Section of Medicine

The April meeting of the Section was not held on the regular date (April 18) as the program of the Stated Meeting of April 6 was arranged in cooperation with the Section.

At the Stated Meeting of April 6 the nominations for new officers of the Section and one member of the Advisory Committee were presented.

Section of Genito-Urinary Surgery

Wednesday Evening, April 19, at 8:30 o'clock

I. Reading of the Minutes

II. Case Presentation
Transurethral removal of prostatic stones with simultaneous revision of prostate, Leo Michel

III. Historical survey of endoscopic prostatic resection, Robert Gutierrez

IV. Paper of the Evening
Transurethral prostatic resection, Nathaniel G. Alcock, University of Iowa (by invitation)
Discussion, Henry G. Bugbee, Clyde W. Collings, Edward L. Keyes, Thomas J. Kirwin, Joseph F. McCarthy, J. Sturdivant Read

V. General Discussion

VI. Executive Session
Nomination of Section Officers and one member of Advisory Committee

Joint Meeting
Section of Otolaryngology
and
Section of Otolaryngology
of the College of Physicians and Surgeons of Philadelphia

Wednesday Evening, April 19, at 8:30 o'clock

I. Reading of the Minutes

II. Papers of the Evening
a. The evolution of the mastoid tip cell as a cell system separate from the remainder of the mastoid cells and its significance, Ralph Almour
Discussion, Oscar V. Batson (by invitation)
b. Functional ear examination in patients with Meniere's syndrome, Page Northington

Discussion, George M. Coates (by invitation)

c. Diagnostic and therapeutic use of the roentgen ray in laryngeal neoplasms, I. Seth Hirsch

Discussion, Fielding O. Lewis (by invitation)

d. Neutropenia, Paul Reznikoff

Discussion, Karl M. Houser (by invitation)

III. Executive Session—Section of Otolaryngology

Nomination of Section Officers and one member of Advisory Committee

The members of the Section tendered a dinner to the members of the Section of the College of Physicians and Surgeons at the Academy at 6:45 p.m.

Section of Orthopedic Surgery

Friday Evening, April 21, at 8:30 o'clock

I. Reading of the Minutes

II. Paper of the Evening

Calcium and phosphorus metabolism and its relation to the parathyroid glands, Edward L. Compere, University of Chicago (by invitation)

III. Discussion, Henry L. Jaffe (by invitation), William Barclay Parsons, Jr., Aaron Bodansky (by invitation), John F. Landon, John Guttman

IV. Executive Session

Nomination of Section Officers and one member of Advisory Committee

Section of Obstetrics and Gynecology

Tuesday Evening, April 25, at 8:30 o'clock

Program from the Women's Clinic of the New York Hospital

I. Reading of the Minutes

II. Papers of the Evening

a. A case of spondylolisthesis, Hervey C. Williamson

b. Anemia of pregnancy, Lucius A. Wing

c. Subacute bacterial endocarditis in pregnancy, William G. Terwilliger (by invitation)

d. Gas bacillus infection, intrapartum and postpartum, Andrew A. Marchetti (by invitation)

e. Bacteriological findings in the uterus during labor and the early puerperium, R. Gordon Douglas (by invitation), Henrietta S. Rhees (by invitation)

f. A pathological study of 500 abnormal placentae, Herbert F. Traut (by invitation), Alberta Kuder (by invitation)

III. Discussion

IV. Executive Session

Nomination of Section Officers and one member of Advisory Committee

AFFILIATED SOCIETIES

New York Roentgen Society

In affiliation with The New York Academy of Medicine

Monday Evening, April 17, at 8:30 o'clock

I. 8:30 to 9:00 p.m., Demonstration and discussion of interesting cases

II. 9:00 p.m. "The value of a multiperforated lead screen in deep x-ray therapy", F. Liberson, U. S. Public Health Service (by invitation)
III. General Discussion
IV. Executive Session

Special Meeting of the
New York Roentgen Society
Thursday Evening, April 27

I. 8:30 to 9:00 p.m. Demonstration and discussion of interesting cases
II. 9:00 p.m. Bronchography in pulmonary tuberculosis (from the Hudson County Tuberculosis Hospital and Sanitarium)
  a. Bronchography an essential and safe adjunct in the study of pulmonary tuberculosis, J. E. Murphy (by invitation)
  b. Bronchography in relation to the pathology of pulmonary tuberculosis, B. P. Potter (by invitation)
  c. Bronchography in the interpretation of the roentgen ray film of chronic pulmonary tuberculosis, with special reference to surgical indications, H. Neuhof (by invitation), Discussion, James B. Amberson, Jr.
III. General Discussion
John R. Carty, David E. Ehrlich

New York Meeting
of the
Society for Experimental Biology and Medicine
Under the auspices of The New York Academy of Medicine
Wednesday Evening, April 19, at 8:15 o'clock

I. Experimental transmission of rabbit pox by a filterable virus, L. Pearce, P. D. Rosahn, C. K. Hu
II. Cultivation of vesicular stomatitis virus, H. R. Cox, J. P. Syverton, P. K. Olitsky
III. A pandemic of rabbit pox, H. S. N. Greene (Introduced by L. Pearce)
IV. Effect of tetanus toxoid in producing active immunity against tetanus, D. H. Bergey and S. Etris
V. Exophthalmos in thyroidectomized guinea pigs by injection of thyrotropic substance of anterior pituitary, and the mechanism involved, D. Marine and S. H. Rosen
VI. Excretion of estrin in acne, T. Rosenthal and R. Kurzrok (Introduced by J. G. Hopkins)
VII. Comparison of concentration of glucose in the stomach and intestine after intragastric administration, I. S. Ravdin, C. G. Johnston, P. J. Morrison (Introduced by F. S. Goldschmidt)

This was the annual business meeting, at which reports of officers were read.

New York Pathological Society
In affiliation with The New York Academy of Medicine
Thursday Evening, April 27, at 8:30 o'clock

I. Demonstration of pathological specimens

II. Carcinomatous thrombo-endarteritis of the lungs, E. B. Greenspan (by invitation)

III. Aortic stenosis: a differential study between calcified bicuspid valves of congenital and inflammatory origin, Max Trubek, Louis F. Bishop, Jr.

IV. The use, significance, and interpretation of silver impregnation in pathology, Nathan Chandler Foot

---

HONORARY FELLOWS AND FELLOWS ELECTED

HONORARY FELLOWS ELECTED MARCH 2, 1933

Charles Achard, Professor of Clinical Medicine, Faculté de Médecine, Paris, Rue Galilée, 37, Paris

Roberto Alessandri, Professor of Clinical Surgery, University of Rome, 31 Via Giovanni Battista, Morgagni, Rome

Sir Charles (Alfred) Ballance, K.C.M.G., C.B., M.V.O., LL.D., M.S., F.R.C.S., Westfield, Hatfield, Herts

Frederick Grant Banting, M.C., M.D., F.R.C.S., D.Sc., LL.D., Professor of Medical Research, University of Toronto, 46 Bedforth Street, Toronto

Sir Henry Hallett Dale, C.B.E., M.A., M.D., F.R.S, F.R.C.P., Director of the National Institute for Medical Research, Mount Vernon House, N.W. 3, London

Otfried Foerster, Professor of Psychiatry and Neurology, Schlesische Friedrich-Wilhelms-Universität, Tiergartenstrasse, 83-85, Breslau

Carl G. Forssell, Professor of Radiology, Karolinska Mediko Kirurgiska Institutet, Stockholm

James Bryan Herrick, M.D., Emeritus Professor of Medicine, Rush Medical College, 242 East Walton Place, Chicago, Ill.

Cornelius Ubbo Ariens Kappers, Professor of Comparative Anatomy of the Nervous System, University of Amsterdam, Oranje-Nassaulaan, 73, Amsterdam

George Richards Minot, M.D., Professor of Medicine, Harvard, 71 Sears Road, Brookline, Mass.

William Gibson Spiller, M.D., Professor of Neurology, University of Pennsylvania, 4409 Pine Street, Philadelphia, Pa.

Alfred Vogt, Professor of Ophthalmology, University of Zurich, Ramistrasse, 73, Zurich

Frederick Karel Wenckebach, Professor of Medical Pathology and Therapy, University of Vienna, Kobenzlgasse, 49-a, Vienna

FELLOWS ELECTED MARCH 2, 1933

David M. Bosworth	58 East 65 Street
Julius A. Miller	354 West 84 Street
Camille Kereszturi	1148 Park Avenue
Henry Lawrence Hall	19 Bradford Avenue, West Orange
Harry B. Epstein	31 Lincoln Park, Newark
Abram Joseph Abeloff	1114 Madison Avenue
James S. Edlin	30 East 40 Street
George J. Heuer	525 East 68 Street
Eugene Lindsay Opie	1300 York Avenue
Max David Mayer	1150 Fifth Avenue
Norman L. Higinbotham	114 East 54 Street
Francis A. Sutherland	39 Fifth Avenue
Benjamin Friedman	771 West End Avenue
Ralph Charles Kahle	8 East 66 Street
Eugene F. Kelley	93 Radford Street, Yonkers
Arthur Goetsch	142 Joralemon Street, Brooklyn
Gerald Reid Jameison	Bloomingdale Hospital, White Plains
George S. Sprague	Bloomingdale Hospital, White Plains

And for Associate Fellowship

Helen Flanders Dunbar, Ph.D.	205 East 78 Street
Adolph Berger, D.D.S.	10 East 74 Street

FELLOWS ELECTED APRIL 6, 1933

Bryant Elliott Christensen	19 East 90 Street
Gilbert J. Dalldorf	Grasslands Hospital, Valhalla
Joseph G. Druss	1235 Park Avenue
Thomas Norris Graham	614 Park Avenue
Carl Hartley Greene	889 Lexington Avenue
Harry M. Greenwald	499 Ocean Avenue, Brooklyn
Leonard Avery Hallock	150 East 39 Street
Eilif C. Hanssen	65 East 55 Street
William Harris	70 East 77 Street
Henry Lewis Jaffe	1215 Fifth Avenue
Mathilde Loth	55 East 66 Street
Eugene Henry Moyle	1088 Park Avenue
John Hugh Mulholland	1088 Park Avenue
Henry Robertson Skeel	115 East 61 Street
Jesse Alfred Tolmach	30 West 59 Street
John Russell Twiss	65 East 55 Street

DEATH OF GEORGE DAVID STEWART

Resolutions adopted at the meeting of the Council held March 22, 1933

The New York Academy of Medicine records with sincere feeling its deep sense of sorrow and loss in the death of its greatly beloved Fellow, George David Stewart, which took place at his home on March ninth.

Dr. Stewart was elected to Fellowship in 1895 and for nearly forty years devoted much of his effort and abundant energy to furthering the interests of the Academy. In 1916, he became Vice-President and three years later was elected to the Presidency. He received the unusual honor of being asked to hold this office for three successive terms, until 1925, as the Academy refused to relieve him from leadership at that critical time.

It was during this period that the long-considered plans for the new Academy building were brought to completion and to no one belongs greater credit for this accomplishment than to George Stewart. His broad vision made it easy for him to grasp the great opportunity for unusual service which lay before us, were we provided with adequate facilities. His power of persuasion was a chief factor in convincing our many benefactors that we should be accorded their support. His active interest in, and work for, the Academy were not lessened by his retirement from the Presidency. He continued as a Trustee until the time of his death and devoted much thought to the work of the Committee on Public Health Relations of which he remained a member until 1929.

With his magnetic personality, his rare gift of humorous expression and his wisdom acquired through wide experience, he was a dominant figure among his fellows.

Dr. Stewart was unusually well endowed by nature to become such a figure. Untiring energy applied to the enlargement of this endowment made of him a man of great insight, rare force, fine tact and a lover of culture and the

beautiful. His leadership was kindly and his followers found it easy to become his disciples.

It is known that he was influenced by a strong religious feeling and he brought to every decision a sense of fairness which made his counsel much sought. As a surgeon and teacher he has left the world his debtor. His writings testify to the breadth of his training and he exerted great influence in keeping the role of general surgery equally broad.

In his death we have lost a forceful leader and teacher, a wise counsellor, a kindly man and a dear friend. The Academy desires to express its great appreciation of these qualities and enter upon the Minutes this testimony to the memory of one we can ill afford to lose.

DEATHS OF FELLOWS OF THE ACADEMY

NATHAN STURGES JARVIS, M.D., Hotel Plaza, New York City; graduated in medicine from Bellevue Hospital Medical College, New York City, in 1884; elected a Fellow of the Academy May 4, 1899; died, April 20, 1933. Dr. Jarvis was one of the founders of the Society of Alumni of Bellevue Hospital.

EMMANUEL JONESSOFF, M.D., 161 West 54 Street, New York City; graduated in medicine from the University of Paris, France, in 1900; elected a Fellow of the Academy May 6, 1909; died, April 4, 1933. Dr. Jonessoff was a Fellow of the American Medical Association, Assistant Physician to French Hospital, Immunologist to French Dispensary, and a member of the County and State Medical Societies.

GEORGE HOOPER MALLETT, M.D., Hendersonville, North Carolina; graduated in medicine from the University of Virginia, in 1885; elected a Fellow of the Academy December 7, 1905; died, March 22, 1933. Dr. Mallett was a Fellow of the American Medical Association and a Fellow of the American College of Surgeons. He was a former President of the Alumni of the Woman's Hospital, a former President of the Alumni of the Associated City Hospital, consultant gynecologist to the Memorial Hospital, and a member of the New York Obstetrical Society.

JOHN MCCOY, M.D., 730 Fifth Avenue, New York City; graduated in medicine from the College of Physicians and Surgeons, New York City, in 1895; elected a Fellow of the Academy May 5, 1904; died, March 16, 1933.

Dr. McCoy was a Fellow of the American Medical Association, a Fellow of the American College of Surgeons, a member of the American Academy of Ophthalmology and Otolaryngology, a member of the American Laryngological, Rhinological and Otological Society, a member of the County and State Medical Societies, and a member of the New York Otological Society. He was Aural Surgeon to the New York Eye and Ear Infirmary, Professor of Otology in the Polyclinic Medical School, Chief Bronchoscopist to Midtown Hospital, Consulting Otolaryngologist to the French Hospital, and Consulting Otologist to the Neurological Institute.

Grace Peckham-Murray, M.D., Putnam, Connecticut; graduated in medicine from Woman's Medical College of New York Infirmary, New York, in 1882; elected a Fellow of the Academy February 4, 1886; died, April 8, 1933. Dr. Peckham-Murray was Adjunct Professor of Women's Diseases at the Post-Graduate School and Hospital from 1902 to 1911. She invented the anesthesimeter, an instrument for regulating the administration of anesthesia.

William Henry Porter, M.D., 245 Fifth Avenue, New York City; graduated in medicine from the College of Physicians and Surgeons, New York, in 1877; elected a Fellow of the Academy January 15, 1891; died, March 27, 1933. Dr. Porter was a Fellow of the American Medical Association, the American Urological Association, the American Therapeutic Society, a member of the New York Neurological Association, the New York Pathological Society, and the State Medical Society. He was Professor of Medicine in the New York Post-Graduate Medical School from 1887 to 1912, also Professor Emeritus of Pathology and Internal Medicine of the same institution.

Alphonso David Rockwell, M.D., Flushing, New York; graduated in medicine from Bellevue Hospital Medical College, New York City, in 1864; elected a Fellow of the Academy January 7, 1869; died, April 12, 1933. Dr. Rockwell was Professor of Electrotherapeutics to New York Post-Graduate School of Medicine. He was former President of the American Electrotherapeutic Association and a member of the American Academy of Medicine.

William Gray Schauffler, M.D., Princeton, N. J.; graduated in medicine from the College of Physicians and Surgeons, New York City, in 1889; elected a Fellow of the Academy May 4, 1893; died, April 30, 1933. Dr. Schauffler was Professor in the medical department of the American University at Beirut, Syria, from 1891 to 1896. In 1917 he was President of the New Jersey State Medical Society.

CORRECTIONS

In the note published in the March issue of the Bulletin, entitled "The Cost of German Medical Literature," page 159, concerning the excessive cost of German medical books, recommendation was made to send complaint to the Akademische Verlagsgesellschaft in Leipzig. This was a mistake and should have read, Börsenverein der Deutschen Büchhandler, Leipzig.

JANET DOE, *Assistant Librarian*

In the April, 1933 number of the Bulletin, which comprises the Annual Report for the year 1932, a mistake was made on page 265, Officers of Sections and Affiliated Societies, January to May, under *Section of Otolaryngology*. The officers as printed are incorrect and should be "Charles J. Imperatori, Chairman and David H. Jones, Secretary".

DONATIONS TO THE LIBRARY FUNDS

Donations and bequests are solicited by The New York Academy of Medicine for the maintenance and expansion of the Library.

A donation or bequest of $5,000 or more will provide for a special library fund, the income of which may be used for the general purposes of the Library or restricted to the purchase of books and periodicals, as the donor or testator may indicate.

FORM OF BEQUESTS

The following is a brief legal form as a suggestion under which bequests may be made in behalf of the Academy:

I give, devise and bequeath unto "The New York Academy of Medicine" of the City of New York, State of New York, a corporation duly incorporated by the Legislature of the State of New York by an act entitled, "An Act to Incorporate The New York Academy of Medicine," passed June 23, 1851, and amended June 4, 1853, June 2, 1877, and April 25, 1924, . . .